Index to MACHINERY, Volume XLII

A	American Society for Testing Materials: Thirty-ninth Annual Meeting Held at Atlantic	Baker Bros., In	Find New Applications	273
Abrasive Cut-off Machine, Bethlehem 617 Abrasive Machine Tool Co.:	American Society of Mechanical Engineers: 71	"Clean-Line" Five-station	Drilling Machines Drilling, Reaming, and Counter-	280
Surface Grinding Machine	William L. Batt, New President of the Society, 189 Joint Engineering Meeting in Chicago 568-American Stainless Steel Co.:	Baker-Raulang	Co.:	680
Accuracy than Necessary, Working to Closer 250 Acctylene Generators, A By-product of 356 Acme Electric Welder Co.:	Stainless Steels Gain Ground Steadily 13 American Standards Association:	Swivel-fork A	Yive-ton "Hylift" Truck	352
Spot-welding Machine	Terms Used in Electric Welding Practice 11 Standards for Drafting-room Symbols 232-	Balancing Mach Baldor Electric	G., Personal of hine, Westinghouse Electro-dynamic	423
Sure-Flow Motor-driven Pump 420 Acme Machinery Co.;	American Tool Works Co.	12-inch Grin "Handy" He	nding Machine	349 695
Cushioned-drive Forging Machine 11 Bolt-threading Machine 151 Double-head Threading Machine 810	Multi-production Lathe	Baldwin-Southw Plate Planer	rark Corporation;	413
Acronal—a New German Synthetic Plastic 248	A Swiss Cupping-test Machine for Sheet Metal. 18 Anco-nut, Structural Ribbed Bolt for Use with 9	An 830-ton,	Triple-acting Hydraulic Press	555 585
Acronal Resins that are as Elastic as Rubber 737 Advance Solvents and Chemical Corporation: Acronal Resins that are as Elastic as Rubber 737	Anco-nut, Structural Ribbed Bolt for Use with. 9 Anglada, Joseph A. Personal of 48 Anodes for Plating, Udylite Ball 23 Anodizing Tank with Cooling and Ventilating	Mirror for	r Giant Telescope	651
Advertising Tends to Reduce Prices and Raise Wages 782	Systems, Piston 44 Anthes, Major Lawrence Lee, Personal of 9	Ball and Roller Morton	ling Machine er Bearings, Lubrication of. H. T.	700
Agrippa Threading-tool Holder	Apprentice Competition, Foundrymen Sponsor 37 Apprentice Training, The Need for a Revival of 45	Ball-bearing Ex	khibit, Franklin Institute Norma-Hoffmann Cartridge Type S K F Grip-lock	670
Pillow Blocks for Ball Bearings 64-K	Arkin, Victor;	Ball Bearing	SKF Grip-lock	758
Air Compressor, see Compressor. 71 Air-conditioned, Ford Plant Being	Die for Making a U-shaped Bend in Round Stock 12	aligning	Ahlberg Pillow Blocks for Fafnir Improved Grease-shield	629 64-K
Air-conditioning Industry Increases Demand for	Armorite—a Soft Elastic Rubber Attached to a Fabric-fiber Base 67 Armstrong, Jr., Thomas N., Personal of 42 Armstrong Mg. Co.:	Ball Bearings,	Hoover	563 345
Machine Shop Equipment	Armstrong Mfg. Co.: Ratchet Die-stocks 48	Hyler	on Out-of-round Shafts. John E.	785
Air-conditioning Small Shop Buildings in Summer. W. F. Schaphorst	Vise and Portable Stand		Bearing? Was This an Early Type	704
Plant for 735 Air Lines, Schrader Quick-acting Couplers for 164	Arter Grinding Machine Co. Hydraulic Rotary Surface Grinding Machine and Automatic Piston-ring Grinding Machine	Pistonel—a	New Aluminum Alloy iver 18-inch Metal-cutting	190
Air-O-Line Controllers, Brown	"Asarcoloy No. 7"—A Cadmium-nickel Alloy for High-speed Motors 33 Asphalt Products Co., Inc.:	Rand Saw with	h Eiling Attachment Precision	232 687
"Air Operator" for Power Press Clutches, Electrically Controlled Airplane Parts, Rubber and Wood Used for Dies in		Harber-Colman	1 Chip Briquetting Machine, Grob h M., Personal of	
Forming. Charles O. Herb	Aspro Metal Finish Assembling Hardened Steel Parts that Require Drilling and Riveting 31	Single-position Barber Tumbli	on Hob Patent	333
Airplane Struts, Templets Facilitate Accurate Nibbling of	Assembling of Parts on a Shaft, Force Fit.	Rarimar Ltd .	Tumbling Machine	279
Ajax Flexible Coupling Co.: Mechanical Vibrator	Name of Association Changed	Barnes Co., W	Pistons Sprayed with Cast Iron 7. F. & John	411
Ajax Mfg. Co.: Hydraulically Operated Friction Clutches 479	Athol Machine & Foundry Co.: Heavy-duty Steamfitter's Vise and Milling	Units	Hydraulic Unit	626
Alemite Division of the Stewart-Warner Corporation	Machine Vise Atkins & Co., E. C.:	Barnes Drill C		
Thin-wall Stainless Steel Tubing 209 Large Stainless Steel Sheets 540	Hole Saw with Replaceable Blade			
Alles, William J., Personal of	Various Industrial Uses 80	Full-hydraul Quantity Pr	er Size and Vertical Honing Machines lic "Fluid Speed" Honing Machine roduction of One Hundred Different	753
Allis-Chalmers Mfg. Co.; "Vari-Pitch" Sheave for Variable-speed Texrope Drives 64-F	Metal-cutting Lathes	Bartlett Co., I	Two Machines Edwin E. ydraulic Press almers Automatic Motor Automatic of the A.S.M.E.	009
Huge Hydraulic Turbines for Boulder Dam Power Development	Do Employe Suggestion Systems Produce Results?	Base, Allis-Chi	almers Automatic Motor	183
Duro-Brace Texateel Sheaves Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Huge Casting for Bed of Forging Machine 440 Automatic Motor Base 483	Automatic, A British High-speed Precision 40 Automatic for Facing Gate Valve Bodies and	Contone Mo	L. New President of the A.S.M.E., mb Optical Co.: easuring Projectors	12.00
Fabricating Transformer Cooling Tubes 243 Huge Casting for Bed of Forging Machine 440	Wedges, Coulter	Ortho-Stereo	Camera which Reproduces Objects	3. 17.00
Early Application of Electric Motor 705		Illuminator Beading Mach	for Microscopic Examination	231
Alloy Adopted for Electrical Resistance Standards, New 737	Coulter Automatic for Facing Gate Valve Bodies and Wedges Automatic Nut Co., Inc.:	Trimming at	R., Personal of	278 822
Alloy Having Unusual Power, Alnico—A Permanent-magnet	Automatic Nut Co., Inc.: Structural Ribbed Bolt for Use with Anco-nut. Automatic Screw Machine. Brown & Sharpe	Bearing Caps.	Broaching Integrally Cast Main	787
Alloy Steels, Carpenter Free-machining	High-speed	Bearing Mount Simplified A	ting for Boring Mill Table,	232-C
Unusual Power	Automatic Screw Machine, see also Screw Machine. Automatic Transportation Co. Tiering Fork Truck with Center Control 6 Automatic with Novel Feature, New Britain Automatics, Cleveland Model K Automatics Designed for Maximum Tool Accessibility and Chip Clearance, New Britain 7 Automatics, Machining a New Free-cutting Aluminum Allow in 4	Bearing Purpo Christopher	ses, Surface Hardening for. H. Bierbaum	204
	Automatics, Cleveland Model K	Schapherst	bricating High-temperature, W. F.	665
Free-cutting 464 Aluminum, Decorative and Protective Coating for 393 Aluminum Die-castings, Finishing Zinc and.	bility and Chip Clearance, New Britain 7 Automatics, Machining a New Free-cutting	Rearings on E	ricating Under-feed Waste-packed Exact Center Line, Method that ing Solit	
Herbert Chase.	Aluminum Alloy in 4 Automobile Industry Leads the Way to Real	Beasley, Herse	ing Solit	294
Aluminum in Machine Design, The Use of 181	Automobile Industry Now Well Stabilized.		Oil-resisting	345
Aluminum in the Shop Equipment Industries 389 Aluminum, New Process of Coating Steel with 584	Automobile Industry Retains Its Leadership 5	Belting Clark	Hook-groove Round Leather	480
Aluminum Pistons Sprayed with Cast Iron	Automobile Output, Record 8	Bending Brak Bennington, E	rd Multiple Flat te, Whitney Light-weight 5. T. Personal of n P. Obitnary of	558 632 A
Vertical Surface Broaching Machines	Automobile Panting is the Last Word in Metal Finishing Automobile Parts, Welding Machines for Assembling, C. M. Taylor Automobile Production Steadily Increases Automobiles, New Materials and New Methods in Manufacturing Lincoln-Zeobyr Automobiles, One Hundred Kinds of Steel in Today's	Berg, Christian Berg, Eskil, O	n P. Obituary of	824-A 424-A
Vertical Surface Broaching Machines Continuous Broaching Machine 286 Hydraulic Straightening Press 416 American Chain Co., Inc.: Acco Utility Jack 346 Wright Hydraulic and Screw Presses 426	Assembling. C. M. Taylor	Babbitt Intend Bethel, Claude	o (thitnary of	65.50 65 - 6
Acco Utility Jack	Automobiles, New Materials and New Methods in Manufacturing Lincoln-Zephyr 4	Abrasive Cu	oundry & Machine Co.; ut-off Machine	617
Cromodizing—a New Low-cost Rustproofing		From White	ee Hot Slab to a Strip of Sheet Stee Minutes ast-resisting Steel for the San Fran	766
American Die-Casting Institute:	Automobiles, Rubber Plays an Important Part in the New	Cars of Ru	ast-resisting Steel for the San Francland Bridge	802
Comprehensive Exhibit Emphasizes Wide Use of Die-castings 606 American Foundrymen's Association:	Automotive Decdustion by Operations on Welt to	Bettcher, Carl Betz, William	W., Personal of	. 569
Foundrymen Sponsor Apprentice Competition. 37:	Matics, Speeding by Operations of Matical Matics, Speeding Automotive Production, Recent Applications of Cemented Carbide in Autosan Cleaning and Drying Equipment, Colt Averill, W. D.: Adapting Present Equipment to Changed	Extruding a	and Forming Caps from Bronze Wir Riveting Fixtures	e 76
Foundrymen Sponsor Apprentice Competition. 37: American Gear Manufacturers' Association: Semi-annual Meeting Held at Niagara Falls. 20: Twentieth Annual Meeting Held at Philadelphia 60:	Cemented Carbide in	Die for Bla Swaging Die	and Forming Caps from Bronze Wir Riveting Fixtures anking Two Pieces at Each Stroke es Supplant Hand-chasing for Finish	. 199
Cast Manganese Steel Wheels for Traveling	Averill, W. D.: Adapting Present Equipment to Changed	ing Non- Safety Bloc	-ferrous Castings	259
American Nickeloid Mfg Co	Axles Broaching Applied to Pressed-steel Front. 4	Grinding W Bevel Gear	ces supplied transferasing for Finish febrous Castings	70
Metal Coatings Now Obtainable on Cardboard . 673 American Optical Co.: "Ful-Vue" Safety Goggle	В	Beveling Attac	chment, Landis Pipe Facing and	. 153
American Rolling Mill Co .	Babbitting Jigs Saves Machining, Use of.	Surface Ha	ardening for Bearing Purposes	
Steel Sheets and Plates of High Tensile Strength 600 Armoo "Stabilized" Steel for Deep-drawing Operations	Babbitting Jigs Saves Machining, Use of. Oliver Herbert) Birkebak, C. Precision T Valves .	Curning and Boring of Air-brake	39
American Screw Co.: Phillips Self-centering-head Screws and Bolts. 232	Temperatures	Bits and Tool	I-holders, Adjustable Shankless	. 4
American Society for Metals: Seventeenth Annual National Metal Exposition. 12:	Bakente Corporation:	EJECUIC 10	ols with Increased Power and Lighte	614-1
Announcement of Exposition to be Held in	Twenty-fifth Anniversary of a New Industry . 2 Bakelite Resins Find New Applications 2	3 1/2 -inch Ju	nior Drill	. 236

Blakeslee & Co., G. S.: Vapor Degreasers	Broaching Machine with Automatic Broach-handling	Carborundum Co. :
Blanchard Machine Co.:	Feature, Lapointe Vertical	Grinding Wheels for the Tool-room
Surface Grinding Machine 64-D Blank Diameters, Method for Determining. Joe W. Jensen 367	Broaching of Universal Joints, Internal and Surface. 580	The Grinding of Milling Cutters:
Blatchford Corporation: Cooke Micro-slotted Nut	Bronze Pressure Forgings, Machining Tobin. Ben Clark 453	Carburizing Boxes, Welded Versus Cast 185 Cardboard, Metal Coatings now Obtainable on 675
Bliss Co., E. W.: Automatic High-speed Press 284	Brown, R. C., Personal of 424 Brown, A. D., Personal of 568 Brown, Harry S., Personal of 95 Brown, Harry S., Personal of 95	
Automatic High-production Presses 611 Making Automobile License Plate 657	Drown, J. H., Personal of	Good Drawings Depend on Good Checking. 433 Carpenter, John W., Personal of
Rlock, Joseph L., Personal of	Brown & Sharpe Mfg. Co.: Hydraulic Type Surface Grinding Machine 36	Carpenter Steel Co. Free-machining Alloy Steels 132 Cast Carburizing Boxes, Welded Versus 185
Blueprinting Machine, Angstrom Lamp 816 Blueprinting Machine, Pease Continuous 412 Blueprints, Making Black-line Reproductions of. W. F. Schaphorst 328	"Omniversal" and Plain Milling Machines. 45 Stainless Steel Caliper Rule 289	Casung Rush Orders Should be Discouraged Steel
W. F. Schaphorst	Rotary Helical-geared Pumps 352 High-speed Automatic Screw Machine 548	Castings, Directions for Ordering Malleable 256
Automatic Screw-inserting and Screw-driving Machine	Micrometer Calipers	Castings for Welded Structures, Steel 327 Castings withstand 3000-pound Pressures.
Bodine Electric Co.: Worm-gear Speed Reducer	Air-operated Controllers 87 Portable Recording Thermometer 565	Molybdenum-iron
Boehly, Henry W.: Die for Piercing Ten Slots in Wall of Drawn	Protectoglo Combustion-safeguard Equipment. 620 Bryant, Howard S.: Repairing Patented Machines	Cast Iron, Composition of Crankshaft
Shell	Bryant Symons & Co.: A British High-speed Precision Automatic 401	Just
Rolt for Basmed Hole in Hardened Start Por-	Buckeye Portable Tool Co.: Portable Grinder and Nut-runner 64-11	Cataract Precision Milling Machine 344 Caterpillar Tractor Co.:
sion. John A. Honegger	Hercules Pneumatic Portable Drill 818 Buckingham, Earle:	Evidence of the Success of an Apprentice System696-C
Bolt-threading Machine, Acme 151 Bolt threading Machine, Oster-Williams 149 Bolt threading Machine, Oster-Williams 149	Laying Out Hobs for Spline Shafts 118	Celeron Spoke Type Gears for General Industrial Use
Bonderizing Process Installed by Buick Motor Co. 126 Bonus Payments, Discharged Employe's Right to.	Buckley Sydney, Personal of 357 Budd Mfg. Co. Edward G.: What is Shot-welding? 97	Cemented Carbide, see Carbide. Cements Containing Thiokol Available for Various
Leo T. Parker	Budd Wheel Co.: A New Rustproofing Method	Industrial Uses
All-welded Press Brake	Budwitz, Peter: Stepped Vise Fittings Serve as Substitute for	Hydraulically Operated. I. F. Yeoman 726 Centering Machines, Lo-Swing and Speedcut Lathes
Flash-O-Lens Magnifying Device 541 Booth, J. B.:	Parallels of Different Heights 274	and Star Centers Tipped with Tungsten Carbide, Lathe 344
Gage for Checking Shoulder Length on Stud 260 Bore-Matic Equipped for Machining Gear-pump	Upright Drilling Machine 17 Buffing Machine, Divine Bros. Sheet 811 Buffing Machine, Packer Continuous Polishing and 342	Chain Drives, Facilitating the Selection of Silent 264 Chain Feed Mechanism with Periodically Accel-
Bodies	Bumng Machine, Selective-speed Polishing and 625	erated Motion. Paul Grodzinski
Blocks and Pistons	Buffing Machines, Marathon Grinding and 632 Buffing Wheels, Standard Outside Diameters for	Chamberland, Hector J.: Oilstoning Tools to Increase Efficiency 485 Chamfering Gear-pump Bodies; Boring, Facing,
Boring and Reaming Machine of Smaller Size, Hydram Drilling	Buhr Machine Tool Co,;	
Boring, Drilling, and Milling Machine, Giddings & Lewis Horizontal	Two-way Drilling Machine and "Hydroscru" Power Unit	Chamfering Machine, Peerless Double-spindle 622 Gear-tooth
Boring, Drilling, and Milling Machine, Ohio 84 Boring, Drilling, and Reaming Machines for Pro-	Buick Crankshafts, New Methods Introduced in Machining 372	Chart for Arc-welded Products, Design
ducing One Hundred Different Parts, Hydram, 794 Boring, Drilling, Reaming, and Facing Machine.	Buick, Machining Pistons for the New 261 Buick Motor Co.:	Bowman
Nateo High-production 5.10	Piston Anodizing Tank with Cooling and Ventilating Systems	Finishing Zine and Aluminum Die-castings:
Boring, Facing, and Chamfering Gear-pump Bodies 786 Boring in a Drill Press, Precision. C. F. Staples. 454 Boring Large Spherical Cavities, Tool for. H. C.	Modernization Program Effects Forge Shop Economies	Chase, W. S., Personal of
Boring Machine and Hydraulic Units, W. F. &	Bullard Co.: Roto-Broaches for Circular Surfaces 288	Chase, W. S., Personal of
John Barnes Cylinder Block	Speeding Automotive Production by Operations on Mult-Au-Matics	Checking, Good Drawings Depend on Good. Forrest E. Cardullo 433 Chelstrom, Robert, Obituary of 296 Cherry, C. A., Personal of 358 Chevrolet Motor Co.:
Boring Machine, Ex-Cell-O Cylinder-block Precision 551	Bunting Brass & Bronze Co.: A New Babbitt Intended for Heavy Impact Loads 802	Chevrolet Motor Co.: High-frequency Tools Speed Up Chevrolet As-
Boring Machine of Unit Type, Simplex Precision. 348 Boring Machine, Pratt & Whitney Introduces a	Loads	sembly Line
New Jig Boring Machine, Pratt & Whitney Tilting Table for Jig 86	Turret Lathes	Goggles with Improved Super-safety Lenses. 227 Chicago Pneumatic Tool Co.:
Boring Machines for Cylinder Blocks and Pistons	Turret Lathe Spindles 769 Burgess Laboratories, Inc., C. F.:	Two-stage Air-cooled Compressors
Bore-Matic Precision 21 Boring Machines, New Type of Universal 41 Horizontal 41	Safety Device on Grinding Machine Assures Use of Goggles	Child Labor has been Eliminated in Industry,
Boring Mill Table, Simplified Anti-friction Bearing Mounting for 232-C	Burke Machine Tool Co.: Motor Drive for Burke Milling Machines 686	Chies, Frank F., Personal of
Boring, Milling, and Drilling Attachment, High- speed 227	Burner Equipment, Protectoglo Combustion-sale-	grinding Operation
Boring, Milling, and Drilling Machines Built to Meet Requirements of Individual Shops 719	Burnishing Equipment, Hanson-Van Winkle- Munning Plating and 89 Burrell, F. P. Personal of 760-B	
Boring of Air-brake Valves, Precision Turning and, C. A. Birkebak	Burring Machine, Crescent	The Hardness of
Gray Milling, and Drilling Machine,	Burring Machine, Crescent 614 Burt, Clayton R. Personal of 821 Bushings, Lengthening the Life of Drill. 328, 599	Chromium Plating, Stop-off Lacquer for Use in 164 Chrysler Corporation:
Boring Small Spherical Cavities, Special Tool for. John A. Honegger 73	Reciproral 782	Management and Employe Cooperation in Chrysler Plants
John A. Honegger 73 Boring Split Bearings on Exact Center Line, Method that Insures 198, 725	Buying is not Always to be Recommended, Rediprocal	Chuck, Permanent Magnets Hold the Work on a New Magnetic
Vorus Vorus Vorus Micrometer Adjustment. Phil. E.	Buying May Become Costly in a Rising Market, Hard-to-mouth	Chuck, Sjogren Speed
Boring Tools, Kershaw Rapid-production 226 Boring, Turning, and Facing Head, Craley 631 Bosses by Welding, Forming, John E. Hyler 198	Relyea 705	New Magnetic Chuck, Siogren Speed Chuck, Toft-Peirce Swiveling and Tilting Magnetic 354 Chuck, Taft-Peirce Swiveling and Tilting Magnetic 86 Chuck Walker 66.1 ench Rotary Magnetic 86 Chuck with Two Sets of Jaws for Centering Long Casting F. Serven
	C	Chucks for Landis Pipe Threading and Cutting
Chart for Bevel Gear Calculations 467 Brabyn, A. T. Obituaries of 824-A Bradford, Benjamin C. Personal of 424 Bradford Machine Tool Co.:	Cable Designed for Wear Resistance, Welding 162 Callahan Can Machine Co., Inc.;	Machine 690 Chucks, New "Universal" Collet 566
Bradford Machine Tool Co.:	Double Roll Feed and Scrap Cutter for Double-	Chucking Machine, Goss & DeLeeuw Five-spindle. 41 Chucking Machines of Four- and Six-spindle Types,
Semi-automatic Bench Drilling Machine 688 Bradley & Vrooman Co.: Sterilkote—a Metal Finish Unmarred by Draw-	action Press 687 Cam and Differential Gear Movement for Chain Conveyor, Combination. J. E. Fenno	National Acme Automatic
ing Operations	Cam and Parallel Motion for Guiding Spindle in Square Path, Combination. J. E. Fenno 716 Cam Mechanism for Operating Tool or Drill Slide,	Cimatool Co.: Peerless Double-spindle Gear-tooth Chamfering Machine. 622
Brake-drums, Machining 664 Brake Lining, Industrial 216 Brake Magnetic Chtch. 226	Recibrocating Slide with. John A. Monegger 343	Machine. 622 Cincinnati Bickford Tool Co.: Three-foot "Super-Service" Radial Drilling
Brake, Magnetic Clutch- Brass Die-casting Machines, Reed-Prentice 409 Brass Die-Casting, The Dies Used in, Charles O.	Cam Milling Machine, Frew	Machine 22 Improved "Super Service" Upright Drilling
Herb	Machine 64-B Cam-plate with Adjustable Lobes. John A. Honegger 65	Machines
duction of	Cam that Moves Transfer Arm in Three Planes,	Tool-room and Heavy-duty Lathes
Charles O. Herb 361 "Brazz-Rite" Furnace for Applying Carbide Tips.	Double-action. Joseph E. Fenno 646 Cams for Automatic Screw Machines, Designing. I. A. Swidlo:	Grinders, Inc.: Roll Grinding Machine with Important Im-
Firth 691 Brazing Process, Savings by Copper 196		provements
Brewer, A. F.: Lubrication Problems Require Thorough Study. 201	Camera which Reproduces Objects in a Three- dimensional Perspective, Ortho-Stereo	Chucking Mechanism for Cincinnati Cutter Grinder
Bridgeport Pattern & Model Works; High-speed Milling Drilling and Boring	Camlock Serrated-blade Reamers, Pratt & Whitney 157 Canadian Machinery Trade in 1934	Adapting Present Equipment to Changed Requirements
Bridgeport Safety Emery Wheel Co., Inc.: 227	Car Frame Shown at the Metal Exposition, Light- weight 208	Circuit. Sundstrand Hydraulic Pump, Control
Machine Machine and Shear Blade Grinding	Carbide Composition Teca Steel Cutting 695	Clamp, Automatic Two-way Air Valve for Operating Turret. George L. Pyritz
Brinell Hardness Testing Machine, Direct-reading, 160 Briquetting Machine, Grob Band Saws and Chip, 687	Carbide Cutting Tools in Present-day Shop Practice, Cemented, Roger D. Prosser	Greenspon
Bristol Co. Wide-strip Pyrometer	Carbide Engineering Co.:	Clamps Designed to Give Wide Opening for Work.
Furnaces	Diamond-wheel Grinding Machine for Carbide Tools 285 Carbide in Automotive Production, Recent Ap-	F. Scriber Clamping Nut of Slotted Type, Jig with Quick- acting, Charles C. Tomney 274
ment in	Carbide in Automotive Production, Recent Applications of Cemented	Clark Belting Co., Victor R.:
British Machine Tool Industry, Marked Activity in the 311		Clark, Ben:
Broachies for Circular Surfaces, Bullard Roto 288 Broaching and Broach-sharpening Machines, Colonial Broach Co. Develops an Extensive Line of 741	Carbide-tool Grinding has been Speeded Up 673 Carbo Hydraulic Lathe, Porter-Cable 47 Carbo-Lathes, Electric Head for 351	Die for Punching Four Equally Spaced Slots in Tubing
Broaching Applied to Pressed-steel Front Axles 497	Carboloy Company, Inc.: Diamond-impregnated Wheel Dresser 352	Fixture for Machining Tobin Bronze Pressure Forgings
Broaching Crankcases at the Packard Plant 593 Broaching Integrally Cast Main Bearing Caps 787 Broaching Machine American Continuous 280	Recent Applications of Cemented Carbide in Automotive Production 500	taneously
Broaching Machine, American Continuous 280 Broaching Machine, Huge Colonial 809	Carbide-tool Grinding has been Speeded Up 673	Air-operated Spot Welder Control 92

Clarke, Walter W.:		Cornell Iron W. rks Inc.	Dealer Manufacturer's Demonsibility for Guaran	
Modern Equipment for the Drafting-room	577	Cornell Iron Warks, Inc.: Rolling Grilles Constructed of Various Metals 658 Correction—Milling Plymouth Cylinder Blocks 656	Dealer, Manufacturer's Responsibility for Guaran- tee Given by. Leo T. Parker	93
Cleaning Machine, Blakeslee Vapor Cleaning Machine, Blakeslee Vapor Cleaning Machine, Pangborn "Rotoblast" "Clean-Line" Drilling Machines, Baker "Clean-Line" Drilling Machines, Baker	30		facture	94
"Clean-Line" Drilling Machines, Baker "Clear Vision" Dial Comparator Federal	$\frac{280}{287}$	Wear and 96 Corrugating Drawn Shells with Dies Using Steel Balls. Warren P. Willett 388 Cost Estimating, Good Judgment Must be Applied	Indexing Die for Finishing Small Slots 3 Defiance Machine Works:	86
"Clear Vision" Dial Comparator, Federal "Clear Vision" Indicator, Federal "Clear Vision" Indicator of Larger Size	46 231	Cost Estimating, Good Judgment Must be Applied	Two-way Face-milling Machine 5	53
	201	Cost, Overhead Should Not be a Fixed Percentage	Hydraulic Plastic Molding Press	53
Drilling and Tapping Machine Sliding-head Drilling Machines Cleveland Automatic Machine Co.:	552	of Labor Cost Reduction Efforts Must not be One-sided 250	Degran, James M., Personal of	30
	34	Cost to Employ a Man in Industry? How Much Does it	Degreasers, Blakeslee Vapor Delack, Burton L., Ohituary of 690 Delanty, Thomas W., Personal of 2	5-C 192
Cleveland Punch & Shear Works Co.: Trimming and Upsetting Press for Test Pieces.	82	Costs of Press Tools, Estimating. C. W. Hinman, 459 Coulter Automatic for Facing Gate Valve Bodies	General-purpose Grinding Machines	
Electrically Controlled "Air Operator" for	414	and Wedges	Delta-Star Electric Co.: Metal-clad Switch-gear for Boulder Dam Power	
Power Press Clutches	693	Boring Machine	House	69 2-A
Anniversary. Cleveland Universal Jig Co.:	773	Counterboring, Drilling, and Reaming Machine, Baker Five-station	Design to Please Users Rather than Themselves. Designers Must	142
Socket-wrench Holder	565	Counterboring Tool, Hand-operated. Edward A.	Designs are Suitable for General Application, Special	142
Climax Molybdenum Co.: Molybdenum Makes Stainless Steel Resist		Countersinking, Drilling, Milling, Reaming, and	Designer Must Follow the Trend of the Times,	105
Highly Corrosive Chemicals Molybdenum Cast Iron and Steel Used in	607	Tapping Machine, Crankshaft	The Machine. Bernard Lester Designers Must Consider Element of Cost Designing Cams for Automatic Screw Machines.	250
Building Diesel Engines Clutch and Ratchet for Imparting Variable Rotary	737	Coupling, Diamond Improved Chain Type Flexible 818 Coupling for Small Shafts, Simple Flexible. John	I. A. Swidlo.	841
Movement, Combination Roller, J. E. Fenno. Clutch at Remote Point, Pneumatic Overload Re-	187	A. Honegger Coupling. Lovejoy Non-lubricated Heavy-duty	Designing to Meet Customer's Needs	706
lief Mechanism for Disengaging. J. E. Fenno Clutch-brake, Magnetic	315	Flexible 632 Couplings, Smith & Serrell "Flexpin" 93	Detroit Power Screwdriver Co.:	600
	630	Couplings, Waldron Cross Type	Power Screwdriver with Magazine Feed	****
running. John A. Honegger Clutch, Conway Heavy-duty Gear-tooth Drive Clutch for Large Press, Safety Block. William E.	627	Course in Pressed Metal Engineering and Die Design. A New College	Direct-reading Brinell Hardness Testing Ma- chine	160
	486	Covel Mfg. Co.: Universal Machine Vise	Dials for Indicating Carriage Travel, Monarch Direct-reading	481
Clutch-operating Mechanism for Gear-box, Compact. F. H. Mayoh	715	Cox, C. R., Personal of	Diameters, Method for Determining Blank. Joe W. Jensen.	367
Clutches, Aiax Hydraulically Operated Friction	588 479	Simple. F. Muir	Diamond Chain & Mfg. Co.: Improved Chain Type Flexible Coupling	818
Clutches, Conway Single- and Multiple-plate. Clutches, Electrically Controlled "Air Operator"	90	Simple, F. Muir 599 Craley Mfg. Co., C. C.: Boring, Turning, and Facing Head 631 Crane, G. S., Personal of 357	Diamond Machine Co.: Surface Grinding Machine of Latest Design. 6	4-N
Coating for Aluminum Descrative and Protective	693	tranes, Shaw-Box Grip Litter for 101	Surface Grinding Machine for Tool-room and Production Work	619
Coating Steel with Aluminum, New Process of Coating Unmarred by Drawing Operations, A Metal	584	Crank Mechanism that Causes Slide to Dwell at Center of Stroke. J. E. Fenno	Die, An Adjustable Multiple Piereing Die- and Mold-cutting Machines, Gorton Three-	711
Coatings for Metal and Non-metallic Surfaces, Non- porous Protective	239	Crank Motion with Adjustment for Varying Velocity of Stroke, Quick Return. F. E. Judson 188	dimensional. Die Arranged for Economical Production of Pierced	613
Coatings Now Obtainable on Cardboard, Metal Cogsdill Mfg. Co., Inc.:	675	Crank Motion with Dead Center Eliminated. L. Kasper	and Blanked Parts. Frank Serral	792 819
Inserted-blade Adjustable Reamers Coining Process, Broadening Use of the	691	Crankeases at the Packard Plant, Broaching 593 Crankshaft Cast Iron, Composition of 788	Die-casting Dies. Steels Used for Die-casting Exhibit in New York	369 567
Coining, Silver Spoons Made by Die-casting and Cole, C.:	819	Crankshaft Lathe, Automatic Center-drive 84 Crankshaft, Special Gaging Equipment for Com-	Die-easting Machine Kux High-speed Automatic:	813
Riveting Fixture for Necked Stud	74	pressor. Charles C. Tomney	Die-casting Machine, Madison-Kipp Presents a New	4-F
Collets for Use on Small Work, Bushing Large. R. A. Dressler	793	Crankshafts, New Methods Introduced in Machin- ing Buick	Die-casting Machine of Unusually Large Size, Madison-Kipp Automatic	749
Collier, Raymond L.: Steel Casting Rush Orders Should be Dis-		Crescent Machine & Tool Co.: Hydraulically Operated Burring Machine 614	Die-casting Machine of Vertical Construction, Madison-Kipp.	345
couraged	671	Cromodizing—a New Low-cost Rustproofing Process 312	Die-casting Machines, Reed-Prentice Brass Die-casting, Machinery Brings Out a New Book	790
Treating Metallic Surfaces to Resist Wear and Corrosion	96	Cunningham C G Personal of 358	Discosting Metals Used in Charles H. Hughes.	446
Electrode Holder Colonial Broach Co.	162	Currie, Jr., Neil, Personal of 488-A Curtis, Frank W., Personal of 424	Die-casting Requires Slicing Die Paris, An Uni- der-cut Charles O Herb	729
Broaching Applied to Pressed-steel Front Axles Eleven New Types of Broaching and Broach-	497	Rubber and Wood Used for Dies in Forming	Die-casting, The Dies Used in Brass, Charles O.	638
Broaching Integrally Cast Main Bearing Caps	$\frac{741}{787}$	Airplane Parts	Die-custings. A New Alloy for the Production of Brass	209
Huge Vertical Broaching Machine Colt's Patent Fire Arms Mfg. Co.:	809	One-man Job Polishing Cowl Rings for Airplane Engines. 517	Die-castings are Steadily Being Improved Die-castings, Comprehensive Exhibit Emphasizes	136
Autosan Cleaning and Drying Equipment Colt-Noark "Protectit" Switch for Overload	10	Templets Facilitate Accurate Nibbling of Air- plane Struts	Wide Use of Die-castings, Extremely Thin Sections in	606
Protection	414	An Adjustable Multiple Piercing Die	Die-eastings. Finishing Zinc and Aluminum. Herbert Chase:	
Common Sense Let Us Have a Redistribution of	$\frac{184}{287}$	Study of	1	$\frac{120}{181}$
Comparator, Federal "Clear Vision" Dial Comparator Microscope for Toolmakers, Stupakoff, Competition, Foundrymen Sponsor Apprentice	421	Small Motor Starter Provides Protection Against Overleads 85	Die-castings from One Set of Dies, Four Dif- ferent, Charles O. Herb	779
Compound Resists High Humidity, New Slushing. Compressor, Lubricating an Air	376	Cut-off Blades, Four-Grip Holder for	Die-castings Made in Machines of Simple Design,	244
Compressors, Chicago Pneumatic Two-stage Air- cooled	101	Cut-off Machine, White Abrasive 218 Cut-off Machines, "Tabor-Brasive" 479	Small Aluminum, Charles O. Herb Die-castings, Now—Cast-iron, Charles O. Herb. Die-castings, Yearly, A Million and a Half Brass.	569
Conco Engineering Works:	760	Cutter for Double-action Press, Double Roll Feed and Scrap 687	Charles O. Herb	361
Concrete Floors as Objectionable as Alleged? Are.		Cutter for Keyway Milling, Ingersoll Tri-lock 630		724
	163	Cutter-grinding Machine, Oliver Universal 554 Cutter-holder with Accurate Adjustment Feature,	Matal Engineering and	304
Cone Worm-gearing, Equipment for Cutting, Lapping, and Testing	79	Eclipse Variable-length 223 Cutters Designed for High Speed, Pratt &	Die-Design-Method for Determining Blank Diame- ters, Joe W. Jensen Die-fling Machine with Forced Lubricating System,	367
Connector, Quick-detachable Welding Cable Contactor for Built-in Applications, Westinghouse. Continental-Diamond Fibre Co.:	278 23	Whitney Die-sinking 92 Cutters, Ingersoll Ray-Blade Face Milling 755 Cutters, Radius Grinding Fixture for Milling.		33
Celeron Spoke Type Gears for General Industrial		Ralph R. Weddell	Die for Blanking Two Pieces at Each Stroke.	199
Use. Continental Machine Specialties, Inc.:	404	Cutters, The Grinding of Milling. A. H. Prey:		386
Combination Filing and Sawing Machine of Band Type	224	Cutters with Cemented-carbide Blades, Ingersoll	Victor Arkin	$\frac{123}{657}$
Band Type "Do-All" Machine Equipped for Band Polishing Deep-throat "Do-All" Machine New Features of "Do-All" Machines	$\frac{420}{627}$	Zee-Lock	Die for Piercing Fifty-four Holes in Formed Sprinkler Top. R. B. Duffey Die for Piercing Ten Slots in Wall of Drawn Shell. Henry W. Boehly	456
New Features of "Do-All" Machines Contour Measuring Projectors, Bausch & Lomb.	750 58	Cutting, Increasing Importance of Flame 200 Cutting Machine, Adjustable Templet and Master	Die for Piercing Ten Slots in Wall of Drawn	123
Contracts Because of Strikes, Failure to Fulfill. Leo T. Parker	600	Plate for Automatic, Joseph Waitkus	the for Lincolng Lour Educity where were	197
Contracts Made by Employes, Firm's Liability for.	542	Cutting-off Machine, Eisler Wet Abrasive-disk 286 Cutting-off, Stamping, and Piercing Press, Flexo. 815	Die for Punching Two Holes in Tubing Simul-	781
Leo T. Parker "Contrasit" Belt. Pulley Bandage Control. Clark Air-operated Spot Welder	694	Cutting Oil, see Oil. Cutting Progress, Oxy-acetylene Welding and 400	Die, Grid Piercing and Forming. F. Server	72
Control Equipment, Euclid Electric	64-I 755		Die-heads for Cutting Taper Pipe Threads	411
Control for Industrial Applications, Photo-cell Control, Reves Automatic Variable-speed Ratchet Control, Tuthill "Fuelstat"	87 61	Cylinder Block Boring Machine and Hydraulic	Helical and Worm Gear-motors	
Control Valve, and Circuit, Sundstrand Hydraulic	01	t vinuer blocks and risions. Bore-Matic Frecision		231 64-F
Pump. Controller for Oilgear Feeds, Remote	6 . 2 6	Boring Machines for 21 Cylinder Blocks by the Rigidmil Automatic Process.	Die, Shear-proof Blanking, William Steller	66:
Controller for Regulating Variable-speed Transmis- sion Reeves Hydraumatic	62	Milling. 524 Cylinder Blocks, Milling Plymouth—Correction. 656	Die Springs Daply Flat-rounded	817
Controllers, Brown Air-operated	87	Cylinders, Selecting Materials for Gas Engine 336	Die stocks, Armstrong Ratchet Die, Twisting and Straightening, Louis H. LePold	660
Controlling Equipment, G. E. Electric Motor- and Current-	4 1 45	D	Die, Two-stage Piercing, Blanking, and Curling, Morell Johnson	735
Conveyor Line with Coil "Tp-ending" Device	644	Danly Flat-rounded Die Springs	Die with Automatic Indexing Mechanism, Disk-	39
Conveyor Rollers, Mathews Ball-bearing Conway Clutch Co.	484	Darling. Nelson J., Personal of	the with Collapsible Funch, Ferning, C. W.	598
Single- and Multiple-plate Clutches Heavy-duty Gear-tooth Drive Clutch	627	Drum Type Milling Machine with Adjustable Head Davis, Vernon E. 681	Hinman Dies are Made, How Steel Rule Cutting. Robert	9.0
Cooke, John F., Personal of	631	Attention to Small Things May Change Failure	Dies for Forming Wire Links on Four-slide Auto-	40
Coolants for Machining Operations Correction	1.88.1	to Success	Dies for Making Flangel Postangular Parts from	40
Bost Posults from O I Mage		Increasing Production by Simple Changes in	Dies for Making Flange 1 Rectangular Parts from	400
Copper Alloy High Tensile Strongth a Feature of	431	Jigs and Tools	Strip Steck, H. Thornton Dies for Producing Pierced and Formed Parts	459
Coolants for Machining Operations, Getting the Best Results from O. L. Maag. Copper Alloy High Tensile Strength a Feature of a New Copper-brazing Process, Savings by Copper Sheeting as Thin as 0.001 Inch Produced	431 208 196	Increasing Production by Simple Changes in Jigs and Tools "Daycoil" Oil-proof V-belts 64-A Dayton Rubber Mg. Co.: "Daycoil" Oil-proof V-belts 64-A Deale. R. C.:	Dies for Producing Pierced and Formed Parts from Strap Stock, C. W. Hinman	

Dies Supplant Hand-chasing for Finishing Non- ferrous Castings, Swaging. William C. Betz. 259	Dumore Co.: Vari-speed Flexible-shaft Tool	Erler, Johannes, Personal of
Dies Using Steel Balls, Corrugating Drawn Shells with Warren P. Willett	Grinding Attachment for Lathe 485 "Spec-Dee" Lathe Grinder 81 Diamond.noint Grinding Wheel Dresser 81	Drill Line Designed for Compact Crauping 400
Relyea	Diamond-point Grinding Wheel Dresser 818 Duomatic High-speed Lathe, Lodge & Shipley 213 du Pont de Nemours & Co., E. I.:	Espen, Jack, Obituary of
Diesel Engineering, Course in	A New Electroplating Process	Cost
Used in Building 737 Diesel Engines, Savings Obtained with 735 Dietrich, Jr., C., W., Personal of 632-B	Synthetic Rubber Used in Airplane Fuel Lines 469	Etten Tool Co :
Dilks Research Laboratories Inc	Durakool, Inc.: Mercury Switches for Machine Tools	Englid Electric & Mfg Co :
Automatic Plate-perforating Machine	Durand, Dr. William Frederick, Personal of 292 Duraspray, Ltd.: New Rustproofing Process for Erected Structures 650	Ewing, William P., Personal of
Dimensioning Assemblies and Parts from a Com- mon Point. C. W. Hinman	Durez Molding Compounds with Graphite Added. 403 Durez Molding Material of High Strength and	Thread Grinding and Carbide Tool Grinding
Dimensions Have Simplified Ford Manufacture	Good Machining Qualities 600	Machines
Decimal. Dings Magnetic Separator Co.: High-intensity Magnetic Pulley 225 Disston & Sons, Inc., Henry: "Nu-MO!" Hacksaw Blades 682 Company Honors Charles M. Hoover, Employe of Long Standing 824.A	Durez, Non-bleeding 20 Durez Plasties that Meet Special Needs, Two New 33 31 Durez "77 SB Black," Acid-resisting 54 Durfee, Charles G., Personal of 42 Duro-Brace Texsteel Sheaves 21 Dynamometer, Taylor "Hi-Eff" 21	Machine 62 Precision Turning and Boring of Air-brake Valves. 321
Disston & Sons, Inc., Henry: "Nu-Mol" Hacksaw Blades	Duro-Brace Texteel Sheaves 21	Valves. 321 Precision Thread Grinding as a Manufacturing Process. 528
of Long Standing	F	Cemented-carbide Tool Grinding Machine 336
Columbian Fiber Polishing Wheel 159	East, Arthur M., Personal of 82	Precision Thread Grinding Machine 685 Exhibit Emphasizes Wide Use of Die-castings, Comprehensive 606
Sheet Buffing Machine S11 'Do-All' Filing and Sawing Machine of Band Type 224	East, Charles W., Personal of	Exhibit in New York, Metal Products 167
Type. 224 'Do-All' Machine, Deep-throat 627 'Do-All' Machine Equipped for Band Polishing 420 'Do-All' Machines New Features of 750	H & G Die-head with Insert Chasers 4 H & G Threading Machine 64- Die-heads for Cutting Taper Pipe Threads 41	Exhibits at the Machine Tool Show, A Preview of
"Do-All" Machines New Features of 750 Dobbrodt, A. F., Personal of 632-B Dochler Die Casting Co.:	Excentric Throw, Fixture for the Accurate Testing	of Some
castings 200	of. Fred B. Jacobs	Exports of Industrial Machinery Show Marked In- crease. Exposition in Cleveland Next Summer, Industrial 322
Dog for Cylindrical Grinders, Work-driving 164 Doler-Brass—a New Alloy for the Production of	Resistance Welding in Refrigerator Manufacture 59 Eckman, M. L., Personal of 35	Exposition in Cleveland, The National Machine
Die-castings. 209 Dovetail Slides, Dimensioning. J. Homewood. 664	Variable-length Cutter-holder with Accurate Ad	Exposition, The Seventeenth Annual National Metal. 129
Drafting Machine, Wrigraph Drafting-room, Modern Equipment for the Walter W. Clarke 577	instruent Feature	B Extruding and Forming Caps from Bronze Wire. William C. Betz
Drafting-room Symbols, Standards for232-C	petitive, Our	F
Adjustable Drawing Table	Eisler Engineering Co.:	Fabricated Steel Products Co.:
Drawings Depend on Good Checking, Good. Forrest	Welder and Trimmer for Wire and Cable 15 Wet Abrasive-disk Cutting-off Machine 28	Facing and Beveling Attachment, Landis Pipe 153
E. Cardullo	Box Type Welding Machines	Facing and Chamfering Gear-pump Bodies, Boring, 786 Facing, Boring, and Turning Head, Craley 631 Facing, Drilling, Reaming, and Boring Machine,
Machines 625 Dresser, Diamond-impregnated Wheel 352	Elberty, R. S.: Electric Drives Facilitate Machine Tool Opera-	Natco High-production
Dresser, Dumore Diamond-point Grinding Wheel 818 Dressler, R. A.:	tion	Improved Grease-shield Ball Bearings 563 Self-aligning Bearing with Double Shields 629
Bushing Large Collets for Use on Small Work. 793 Drill, Black & Decker Junior	A New Use for the Electric Arc 35	Fair to be Held Early in March, Leipzig Engineering 320
Drill, Black & Decker Junior 64-K Drill, Black & Decker ½-inch Junior 230 Drill Bushings, Lengthening the Life of 328, 599 Drill Grinder with Jig for Small Drills, Oliver 351	Electric Controller & Mfg. Co.: Youngstown Improved Safety Limit Stops. 34 Electric Drives Facilitate Machine Teel Open.	Fairbairn, Walter M., Personal of
Drill, Hercules Pneumatic Portable	Electric Drives Facilitate Machine Tool Opera- tion. R. S. Elberty	ments
Drill of Midget Proportions, Thor Electric 94 Drill Press, Precision Boring in a. C. F. Staples 454	ment, G. E	e grinding Operation 469
Drill, Rotor Pneumatic 757 Drill, Stanley Light-weight Portable Electric 758 Drills and Reamers, Ingersoll Zee-Lock Core. 232-B	Electric Switches, Four-speed Drive Controlled by 28 Electric Tools Speed Up Chevrolet Assembly Line,	Farrel-Birmingham Co., Inc.: Farrel-Sykes Improved Gear Generating Machine. 64-F.
Drills, C. P. Universal Portable Electric 290	High-frequency Portable Electric Tools with Increased Power and Lighter Weight Black Docker	6 Hydraulic Press 416 Farval Crporation: K Lubricating System for Machine Tools 64-D
Drillis, Skilsaw Electric 161 Drilling and Milling Machine, Dreses Multi-duty Horizontal. 625	Weight, Black & Decker 64- Electro Lift, Inc.: Twin-hook Monorail Hoist 63	Fastening Hold-down Stud in Blind Hole in Die, Method of. John A. Honegger 392
Drilling and Tapping Machine, Cleereman 42 Drilling and Tapping Machines, Langelier 623 Drilling, Boring and Milling Machine, Giddings &		
Lewis Horizontal	Hobart	3 Fatigue on Output, The Effect of 240 4 Federal Machine & Welder Co.:
Drilling, Boring, and Milling Machine, Ohio 84 Drilling, Boring and Reaming Machine of Smaller Size, Hydram	Electrode-holder, Colmonoy 16 Electrode-holder, Jackson Arc-welding 69	"Oil Spot" Welder with Hydraulically Actuated Electrodes
Drilling, Boring, and Reaming Machines for Pro- ducing One Hundred Different Parts, Hydram, 794	Electronic Inspection Laboratories	Resistance Welding in Refrigerator Manufacture 590 3 Federal Products Corporation:
Drilling Equipment by the Use of Arc Welding, Building Oil-well, C. M. Taylor	Electroplating Process, A New	9 "Clear Vision" Indicator 46
Drilling Fixture, Haskins Tapping and	Ellicott. Machine Co.:	Feed Arrangement for Automatic Wheel-dressing Device, Variable, John A. Honegger 785
Drilling Machine and "Hydroscru" Power Unit,	Motorizing Unit 6: Elwell-Parker Electric Co.: Elevator Truck of Improved Design 2:	Feed Mechanism, Adjustable, L. Kasper 379
Drilling Machine, Bradford Semi-automatic Bench. 688	Wooden Pallets Used in Combination with a Fork Truck	Stock- F. H. Mayoh
Drilling Machine, Cincinnati Bickford Three-foot "Super-Service" Radial	Tiering Truck Permits Maximum Utilization of Storage Space	Hourglass-worm Gear Shaper and Worm-lapping Machine 147 Gear Shaper with Gap Type Cutters 476
Drilling Machine, Defiance Production 753 Drilling Machine, Ex-Cell-O Hydraulic Power Units and Hydraulic 62	Storage Space 3: Emerson Electric Mfg. Co.: Motor Designed for Smooth Starting 4: Employ a Man in Industry? How Much Does it	
Drilling Machine, Langelier High-speed Bench 160		Feltes, George H., Obituary of
Drilling Machine, Norths Mor-Speed Radial. 634 Drilling Machines, Natoo Deep-hole . 614 Drilling Machines, Baker "Clean-Line" . 280 Drilling Machines, Cincinnati-Bickford Improved "Super-Surface" Upright . 217 Drilling Machines, Cleereman Stiding-head . 552 Drilling Machines, Fosdick Hadial, Sensitive, and	Employe Cooperation in Chrysler Plants, Management and, K. T. Keller Employes for Promotion, A Method of Evaluating	Crank Motion that Causes Slide to Dwell at Center of Stroke
Drilling Machines, Cincinnati-Bickford Improved "Super-Surface" Upright	Qualifications of Employe's Right to Bonus Payments, Discharged. Leo T. Parker 66	ment for Chain Conveyor 115
Drilling Machines, Fosdick Radial, Sensitive, and Unright.	Employment Caused by Improved Machinery, Increased.	parting Variable Rotary Movement 187
Drilling Machines, "Hole Wizard" Radial 680 Drilling, Milling, and Boring Attachment, High-	Employment Greatest in Highly Mechanized Industries	tion of Slide
Drilling Milling and Boring Machines Built to	Employment in Automobile Industry Now Well Stabilized. 5	engaging Clutch at Remote Point
Meet Requirements of Individual Shops 719 Drilling, Milling, Countersinking, Reaming, and Tanging Machine Crankshaft	Employment, The Use of Machine Equipment Aids 5: Emrick, George W.: How to Overcome Some Tapping Troubles 5	Reciprocating Motion for Table Obtained by
Tapping Machine, Crankshaft	Enameling Process Improves Quality at Less Cost, New	Double-action Cam that Moves Transfer Arm in
Drilling, Reaming, and Counterboring Machine.	Engineering & Research Corporation: Profiling Machine for Airplane Propellers 2	Combination Cam and Parallel Motion for Guid- ing Spindle in Square Path
Drilling, Reaming, Boring, and Facing Machine,	Largest Gear-rim Forging Ever Made in Great	Pulsating Rotary Movement for Operating Shell Hopper 783
Nateo High-production 549 Drilling Slate, Tools for 72 Drilling, Tapping, and Milling Machine, Kingsbury	Engraving Machines, Gorton Three-dimensional	3 Ferrous Metals to Resist Corrosion, Heat, and Wear: Treating 540 540 13 Files, Hand, and Mill-cut Rotary 232
Drilling Unit Hoefer Self-contained Hydraulic-food 27	Die- and Mold- 6 End-mill Sharpening Fixture, Weldon 2 Engine, see Gas, Steam, Oil, etc.	Files, New Type Nicholson
Drill-sharpening Machine, Wells	Engineering at Lafavette College, Seventy Years of 5	Square Inch
Drive for Airplane Propellers. Belt 452	roung (14 Filing Attachment, Precision Band Saw with 232
Drive for Foxboro Control Pyrometers, Improved Motor. 91 Drive Mechanism, Two-purpose Intermittent.	Engineering Required in Manufacturing as Well as in Design Engineering Schools Should Not Educate Spe-	Filing. Band-sawing, and Polishing Machine with 82 Deep Throat . 627 Filing Machine with Forced Lubricating System,
Drive, Reeves Self-contained Variable-speed 561	cialists	Filter for Industrial Application, Purolator Double-
Drives Facilitate Machine Tool Operation, Electric. R. S. Elberty 254	Students, Detroit Equalizing Attachment for Wire-forming Slide,	19 type
Drives, Facilitating the Selection of Silent Chain. 264 Duffey, R. B.: Die for Piercing Fifty-four Holes in Formed	Pressure. L. Kasper	91 Purolator Air
Sprinkler Top 456	Eraser of Spun Glass	20 Finish are Wasteful, Large Allowances for 186 20 Finish on Timken Bearings, Measuring the 166

Finishing Zinc and Aluminum Die-castings. Herbert Chase:	Gear Shaper with Gap Type Cutters, Fellows	476	Greenspon, Edward:
1	Gear Teeth, Machine for Crowning Internal	$616 \\ 559$	Jig Equipped with Quick-acting Clamp 723 Grinder and Nut-runner, Buckeye Portable 7431
Firth-Sterling Steel Co.: 181 "Braze-Rite" Furnace for Applying Carbide	Gear-tooth Chamfering Machine, Peerless Double- spindle. Gears, Finishing Machine for Internal	622	Cutter Chucking Mechanism for Cincinnati
Fischer W F	Gears for General Industrial Use. Spoke Type Non-	216	Grinder, Diehl Electric Bench 231 Grinder for End-mills and Reamers 683 Grinder "Handy" Heaven Reamers 683
		404	Grinder, "Handy" Heavy-duty Bench
Spline-shaft Grinding Machine 417	Gears, Gleason Surface-hardening Machine for	101	Grinder, Prosser Widia Cemented-carbide Tool. 349 Grinder, Small-size High-speed Air 232.B
How to Construct a Logarithmic Chart 192 Fitchburg Grinding Machine Corporation: Spline-shaft Grinding Machine 417 Fixture for Machining Tobin Bronze Pressure Forgings Ben Clark 453 Fixture with Interchangeable Indexing Bars for Spacing Rivet Holes. Joseph Waitkus 595	Large Bevel Gears, Ingenious Devices Used in Producing Packard Transmission Gears, Nickel Alloy Iron for	415	Grinder, "Spee-Dee" Lathe
Flanders Rainh E	Gears, Nickel Alloy Iron for	$\frac{498}{333}$	Grinder, Stanley Flexible-shaft 564 Grinder, Themac Precision 756
To the Men Responsible for Continued Progress	General Electric Co.: Cycle Recorder for Welding Operations Portable X-ray Equipment Mounted on a Truck	149	Grinder with Jig for Small Drills, Oliver Drill 351 Grinders for Cemented-carbide Tools, Prosser
DCW Can America Regain Prosperity 9	Push-button and Rotating-drum switches	214	Grinders of the Reciprocating Table Type, Stand-
Personal of 357 Flash-O-Lens Magnifying Device 541 Flats, Mann Optical 291	Alnico-A Permanent magnet Allow Having Un-	312	Grinders, Supports for Commutator 54
"Flea Power" Motor, Speedway 749 Flexarc Direct-current Welder 285	usual Power	337	Grinders, Work-driving Dog for Cylindrical 164 Grinding and Buffing Machines, Marathon 632
Flash-O-Lens Magnifying Device 541 Flats, Mann Optical 291 'Flea Power' Motor, Speedway 749 Flexarc Direct-current Welder 285 Flexible-shaft Machines, Strand Three-speed 478 Flexible-shaft Tool, Dumore Vari-speed 230 Fleximatic Drilling, Tapping, and Milling Machine, Kingsbury. 156	ment Low-pressure Steam-turbine Casing and Exhaust Hood.	410	Grinding and Carbide Tool Grinding Machines, Ex-Cell-O Thread Grinding and Lapping Machines to be Exhibited.
Fleximatic Drilling, Tapping, and Milling Machine, Kingsbury. 156	Safety Record Established in 1935	466 567	Grinding and Lapping Machines to be Exhibited. New Designs of Norton
Cutting-off Stamping and Dioreing Dans		598 654	Thread. 528 Grinding Attachment for Lathe, Dumore 483 Grinding Cobels Wirete Biography Cobels Wirete B
"Flexpin" Couplings, Smith Serrell 93 Floors as Objectionable as Alleged? Are Concrete 586 "Fluid Speed" Honing Machine, Barnes Drill	Shent Switch with No Moving Parts to Wear	712	Grinding Cobalt Wire to a Diameter of One-half Millimeter. O. S. Marshall
Co.'s Full-hydraulic	Fiftieth Anniversary Commemorated Electric Soldering Baths Improve Product and	731	Grinding Fixture for Milling Cutters, Radius. Ralph R. Weddell
Foote Bros. Gear & Machine Co	Field-discharge Switch for Motors and Gear-	780	Grinding has been Speeded Up, Carbide-tool 673 Grinding Machine, Abrasive Machine Tool Co.'s
Helical and Worm Gear-motors	motors	809	Surface
Variable-voltage Transformer for Portable Equipment.	Variable-speed Transmission General Motors Corporation:	290	Grinder, Arter Hydraulic Rotary Surface 60 Grinding Machine Assures Use of Goggles, Safety
Ford Motor Co.: Ford Plant being Air-conditioned	Automotive Industry Points Way to National Progress	489	Device on
Building Ford V-Eights Machines in	General Plastics, Inc.: A New Molding Material that is Non-bleeding.	209	Grinding Machine, Blanchard Surface
Manufacture Simplified Ford	Two New Phenolic Plastics that Meet Special Needs.	336	Shear Blade Grinding Machine, Brown & Sharpe Hydraulic
Extensive Use of Gage-blocks Insures Ford Accuracy	Phenolic Molding Compounds with Graphite Added. Acid-resisting Durez "77 SB Black"	405	Type Surface Grinding Machine Equipped for Grinding Long
An Air-conditioned Machine Shop Turns Out More Accurate Work Composition and Properties of Ford Crank-		606	Holes, Heald Internal
808108	Machining Qualities Plating Machine with Housing and Cover of Durez.	803	Tool. 556 Grinding Machine, Ex-Cell-O Precision Thread. 685 Grinding Machine, Fitchburg Spline-shaft
Forge Shop Economies, Buick's Modernization Program Effects Forging Ever Made in Great Britain, Largest	Generator for Soldering and Brazing, Acetylene Generator, Linde Medium-pressure Acetylene	154 290	Grinding Machine for Carbide Tools, Diamond-wheel.
Gear-rim	Generators, A By-product of Acetylene	356	Grinding Machine for Multi-diameter Shafts.
Forging Plants, Gas Furnaces for 339	bined. Frederick H. Fairweather	444	Landis Semi-automatic Hydraulic
Forgings, Machining Tobin Bronze Pressure. Ben Clark Forming and Finishing Sheet Metal, Equipment	Adolph Moses Geneva Stop Mechanisms of Modified Design. Paul	588	Work, Diamond Surface 619 Grinding Machine, Gallmeyer & Livingston Hydraulic Surface 29
Forming Cone from Proper Wine Futurillar 155	Geometric Tool Co.	251	Grinding Machine, Hanchett Swing-arm 688 Grinding Machine, Hanchett Vertical-spindle Sur-
Formulas for Obtuge angled Triangles Simple	Threading Machine with Sliding Die-head Gibb, W. H., Personal of	$\frac{59}{292}$	Grinding Machine, Jones & Lamson Automatic
Fosdick Machine Tool Co.:	Horizontal Boring, Drilling, and Milling Machine	28	Grinding Machine, Newall Automatic Universal
Radial, Sensitive, and Upright Drilling Machines 16 Safety Overalls Worn by Men in Plant 358	Gilmer Co., L. H.: Oil-resisting Belt	84	Thread Grinding Machine, Norton 36-inch Roll 543
New Foster Machines at the Show 64-J	Gisholt Machine Co.: No. 3 Turret Lathe Designed for Fast Manipula-	10	Grinding Machine of Latest Design, Diamond Surface
Four-Grip Tool Co.: Holder for Cut-off Blades 693	tion Ram Type Turret Lathes Threading Two-ton Oil-well Pipes on Heavy-duty	279	Grinding Machine, Oliver Face-mill 64-6 Grinding Machine, Oliver Universal Cutter 55-6 Grinding Machine, Ransom High-speed 814
Foxboro Co.: Improved Motor Drive for Foxboro Control	Turret Lathes	435	Grinding Machine, Kansom High-speed 685 Grinding Machine, Spring 685 Grinding Machine, Van Norman High-speed Piston 348
Pyrometers 91 Frauenthal, A. H., Personal of 760-A	Machining Forty-four Plymouth Flywheels an	534	Grinding Machine with Important Improvements,
French. H. J., Personal of 568-A Frew Machine Co.: Automatic Spline Milling Machine 89	Glascock Bros. Mtg. Co.: Shear and Welder	90	Grinding Machines, Adaptations of Heald
Cam Milling Machine 624	Glass, Eraser of Spun	820	Grinding Machines for a Large Variety of Work,
Cam Milling Machine 624 Frey, Muir L. Personal of 632 B "Fuelstat" Control. Tutbill 61 "Ful-Vue" Safety Goggle 162	a New Gleason Works:	437	Grinding Machines, Gardner Single-spindle and
Furnace for Applying Carbide Tips, Firth "Braze- Rite" 691	Gears	415	Grinding Machines, Norton Crankpin and Cam-
Furnace for Hardening High-speed Steel, Sentry Electric 88	Glencer Co., J. C.: Glenco Compensating Tool-holder Globe Steel Tubes Co.:	91	Grinding Machines, Pratt & Whitney Gear-Grinding of Milling Cutters, The. A. H. Prey:
Electric 888 Furnace, Lindberg Screw Type Pot 165 Furnace Temperatures, Test Blocks for. R. C.	"Irrigizing" Ferrous Metals to Resist Corrosion, Heat, and Wear		2
Deale 327 Furnace, Trent Electric 564 Furnaces, Bristol Pyrotrol Safety Device for Light	G-M Laboratories, Inc.: Photo-electric Relay	623	Honeuton
Ing tras	Goeman, Charles:		Grinding Universal-joint Crosses
Furnaces for Forging Plants, Gas	Drilling and Riveting	392	Grinding Wheels, see Wheels. Grindrod, Cyril, Personal of 569 "Grip Lifter" for Cranes, Shaw-Box 160 Griswold, R. A. Personal of 632-1
G	Clamp Goggle. "Ful-Yue" Safety Goggles, Safety Device on Grinding Machine As- sures Use of Goggles with Improved Super-safety Lenses	$\frac{662}{162}$	
Gage-blocks Insures Ford Accuracy, Extensive Use of. Charles O. Herb	Goggles, Safety Device on Grinding Machine Assures Use of	820	Band Saws and Chip Briquetting Machine 68
Booth	Goggles with Improved Super-safety Lenses Goldberg, H.:		Grodzinski, Paul: Geneva Stop Mechanisms of Modified Design. 25 Nine-speed Gear-box with Single-lever Control. 31
Booth 260 Gage, Inspectron Automatic 343 Gage Set, Ford Exhibits New Johansson 48 Gages Rapid Pressure Rocetor for Testing 54	A Machine Tool Replacement Program that Pays Dividends. What Do We Gain by Using Ground-thread	309	Chain Feed Mechanism with Periodically Ac-
Gages, Rapid Pressure Booster for Testing 548 Gages, Sheffleld Adjustable Plug 816 Gaging Equipment for Compressor Crankshaft, Special Charles C. Tomney 257	Taps? Goodrich Co., B. F.: V-belts for Multiple and Single Drives	765	Nine-speed Gear-box with Single-lever Control. Chain Feed Mechanism with Periodically Accelerated Motion Grothaus, L. W. Personal of
Special. Charles C. Tomney	V-belts for Multiple and Single Drives Sand-blasting Machine Protected by Rubber	345	Commission Dealer Manufacturer's Re-
Hydraulic Surface Grinding Machine 29 Gardner-Denver Co.:	"Hipress" Air Hose	746	
Molybdenum-iron Castings withstand 3000-pound Pressures 736	Gorton Machine Co., George: Three-dimensional Die- and Mold-cutting Ma- chines.	613	н
Single-spindle and Horizontal Disk Grinding	Goss & DeLeeuw Machine Co.: Five-spindle Chucking Machine		Hacksaw-blade Simplified Practice
Machines 21f Gas Furnaces for Forging Plants 332 Gears and Gearing, see also Bevel, Helical, Spiral,	Gould & Eberhardt: Universal Hobbing Machine of Unusually Large		Hall Planetary Co.:
Gears and Gearing, see also Bevel, Helical, Spiral, Spur, Worm, etc. Gear-box with Single-lever Control, Nine-speed.	Size Tool-room Shaper Graduate? Is there a Place for the Young Engi-	61	
Paul Grodzinski	Graduate? Is there a Place for the Young Engineering.	714	Medal. 67 Planetary Machine for Milling External and Internal Threads Simultaneously 75
Gear Failures, Common Causes of 302 Gear Generating Machine, Farrel-Sykes Improved 64-F	neering. Graduating Small Disks. Emergency Dividing Engineer for. Willis H. Sargent. Grand Trunk Railway System:	793	
Gear Generating Machine, Farrel-Sykes Improved. 64-F Gear-grinding Machines, Pratt & Whitney . 60 Gear-hobbing Machine, Milling Threads on a. O. S. Marshall 599	Use of Banditting Jigs Saves Machining	470	Tool for Cutting Holes in Thin Sheets 260 Method that Insures Boring Split Bearing on 72.
Marshall. 599 Gear Lubrication Problem . 728 Gear-motors, Diehl Helical and Worm 223	Grant Mfg. & Machine Co.: Multiple-spindle Rivet-spinning Machine Graphite for Lamp Bases, Colloidal	225	
Gear Movement for Chain Conveyor Combination	Grav Co., G A.: Planing Milling Boring and Drilling Machine	94	
Cam and Differential. J. E. Fenno	Nibbling Machines of New Sizes		Automobile Fender Polishing Lathes 232
Gear Noise—Its Causes and Correction	Greenerd Arbor Press Co.:		Hampson, Henry S., Obituary of
Gear-rim Forging Ever Made in Great Britain		683	
Gear Shaper and Worm-lapping Machine, Fellows Hourglass-worm.	Greenerd Hydraulic Press Greenfield Tap & Die Corporation: "No-Mar" Wrench for Hexagonal Fittings	163	chine 5. Grinding Universal-joint Crosses 53. Swing arm Grinding Machine 68

Hancock Valve Division of the Consolidated Ash- croft Hancock Co.:	Hob Patents, Barber-Colman Single-position 833 Hobs for Spline Shafts, Laying Out. Earle Buck-	Indicator, Federal "Clear Vision"
	Ingham	Industry Again Face Regimentation? Does
H & G Threading Machine	& Eberhardt Universal	Industry. The Purpose and Duty of
H & G Die-head with Insert Chasers 47 H & G Threading Machine 64-C 'Handy' Heavy-duty Bench Grinder 695 Hanley, Edward J., Personal of 769-B Hanna Engineering Works: Portable Pneumatic Press 160	and Pipion 620	Ingels Elbow Machine Cornoration:
	Self-contained Hydraulic-teed Drilling Unit. 27 Hoist, Harnischfeger "Zip-Lift" . 558 Hoist, Twin-hook Monorail . 631	Smoke-pipe Elbows Made by Quantity-produc- tion Methods 239 Ingersoll Milling Machine Co.: Zee-Lock Core Drills and Reamers 232-B
Hannifin Mfg. Co.: "Hi-Power" Portable Hydraulic Riveting Ma- chine. 59	Hoists, Conco Bail-bearing Hand-chain	Zon-Look Counterborns 950
chine	Holder, Agrippa Threading-tool	Adjustable Zee-Lock Hollow-mill
What!—Riveting a Silent Operation?	Holder, Colmonoy Electrode	Custom-built Machines Can be Tailored to Fit
	Holder for Truing Diamonds, "Sta-Kool" 288 Holder, Jackson Arc-welding Electrode 694 Holder with Accurate Adjustment Feature, Eclipse	the Work
Hardened Tools, Eliminating Soft Spots from	Variable-length Cutter- 223 Holders, Adjustable Shankless Bits and Tool- 48	"Hi-Steel"—a Recent Low Alloy of High Tensile Strength
pher H Bierbaum Purposes, Surface. Christo-		Tensile Strength Inspection, Radium as a Means of, J. F. Springer 402 Inspectron Automatic Gage
Hardening Machine for Large Bevel Gears, Gleason Surface- Hardening Strains, Shielding Thin Sections of	Hole Saw with Replaceable Blade, Atkins 287 "Hole Wizard" Radial Drilling Machines 680	Inspectron Automatic Gage 343 Installment Plan Erected in a Morigaged Building, Machinery Sold on, Leo T, Parker
Punch to Reduce. W. T. Koehler 467	Holes in Thin Sheets, Tool for Drilling. William M. Halliday. 260 Holeunit Hydraulic Heads, Natco High-production	Vincent Waitkus, Jr. 587 Intermittent Gear Movements, Combined Geneva and, Frederick H. Fairweather 444
	Machines Equipped with 549 Holland, L. D., Personal of 488-A	International Nickel Co.:
Hardings Bros. Inc.: Cataract Precision Milling Machine 344 Cataract Precision Ball-bearing Bench Lathes, 557 Hardiness Testing Machine Direct reading the State of	Hollow-mill, Ingersoll Adjustable Zee-Lock 418 Hollow-mills, Kutmore Adjustable 419	Recent Applications of Nickel Steels and Alloys 134 Light-weight Car Frame Shown at the Metal
Brinell	Lengthening the Life of Drill Bushings 328	Exposition 208 Huge Cylinders of Alloy Steel Help Locomotive Climb Steep Grades 404
Heavy-duty Arc Welding Machines	Holton, R. H.: Mechanism for Driving Two Shafts Intermittently and Alternately	Que half of All the Nickel Produced is Used in
Welder of Greater Amperage	Homewood, J.: Dimensioning Dovetail Slides	the United States 541 Iron for Gears, Nickel Alloy 333 Iron, Wrought, Cast, etc. see Wronght, Cast, etc.
	Hommelava—a New Enameling Process Improves Quality at Less Cost	1
Harrington Paint Co. Inc .	Cam-plate with Adjustable Lobes	Jack. Acco Utility
A New Rustproofing Development 35.5 Harrison, R. E. W., Personal of 168-B Hart, Frederick, Obituary of 98	Special Tool for Boring Small Spherical Cavities 73 Reciprocating Slide with Cam Mechanism for Operating Tool or Drill Slide 379	Jack, Acco Utility Jack, Hydraulic Work-supporting. J. A. Honegger 718 Jackson Electrode Holder Co.:
Haskins Co., R. G.: Heavy-duty Tapping Machine	Expansion Bolt for Reamed Hole in Hardened Steel 392	Arc-welding Electrode-holder
Hart, Frederick, Obituary of 96 Haskins Co., R. G.: Heavy-duty Tapping Machine 478 Tapping and Drilling Fixture 744 What Do We Gain by Using Ground-thread Taps 7	Simple Flexible Coupling for Small Shafts 458 Centrifugally Operated Starting and Over-run-	Fixture for the Accurate Testing of Eccentric Throw
Taps 765 Hatch. Frank A., Obituary of 232-F Hawkinson, Walter E., Personal of 632-B	ning Clutch 537 Over-running Clutch 588	Height
Havnes Stellite Co.: Hard-faced Punch for Hot-punching Slots in	Hydraulic Work-supporting Jack 718 Multi-toothed Adjustable Sweep Tool for Face	Japanese Machinery Imports Increased in 1935. 579
J-metal Tool Used in Turning Manganese Steel	Milling 723 Variable Feed Arrangement for Automatic Wheel-dressing Device 785	Jarvis Co., Charles L.:
Stellite Employed for Other Purposes than Cut-	Honing Machine, Barnes Drill Co.'s Full-hydraulic "Fluid Speed" 753	"Speedwitch" Flexible-shaft Grinder
ing Tools 802 Head for Carbo-Lathes, Electric 351 Heald Machine Co.:	Honing Machine, Hutto Hydraulically Actuated. 12 Honing Machines, Barnes Horizontal and Vertical. 64-A	Jessop, E. H., Personal of
Bore-Matic Precision Boring Machines for Cylinder Blocks and Pistons 21	Hoover Steel Ball Co.: Radial and Angular Contact Ball Bearings 345	New Steel for Cold-header Dies
Internal Grinding Machines for a Large Variety of Work	Hopper, Pulsating Rotary Movement for Operating Shell, J. E. Fenno	Die and Punch Made from a Solid Bar 607
Internal Grinding Machine Equipped for Grinding Long Holes 682	Hose, Republic Oil-resisting Pneumatic 348 Hot-pressing of Non-ferrous Metals 457	The Search for Better Quality in Tool Steel. 666 Jewel Motor-operated Timer, Walser
Grinding Thrust Bearing Plates for Derricks 696 Producing Accurate Bores in Pressed-Steel Pulleys 700	Houghton & Co., E. F.: Grinding Paste and Soluble Grinding Oil 566	Drill. F. Muir
Adaptation of Heald Grinding Machines 748 Boring, Facing, and Chamfering Gear-pump	Hughes, Charles H.: Vetals Used in Discusting 446	a New Jig Equipped with Quick-acting Clamp. Edward
Healey, Edward A.:	Hurlburt Harry B. Obituary of 424-A Hutto Engineering Co., Inc.: Hydraulically Actuated Honing Machine 12	Greenspon 723 Jig for Drilling Elongated Holes. Arthur 718
Hand-operated Counterboring Tool	Hydram Drilling, Boring, and Reaming Machine	Signoretti. 718 Tigwith Quick-acting Clamping Nut of Slotted Type. Charles C. Tomney
duction Basis. J. B. Nealey 168 Heffron, Jr. A. D. Personal of 632-A Heitkamp, Frederick B., Personal of 232-D	Hydram Drilling, Boring, and Reaming Machines for Producing One Hundred Different Parts, 794	Jig with Revolving Work-retainer, Indexing. F. Server 661
Togethering the Title of This The Live of The Control of the Contr	"Hydraulic" Planer, Rockford Hydraulic Power Units and Hydraulic Drilling Machine, Ex-Cell O 62	F. Server G. Britannia F. Server G. G. Server G.
Hellstrom, A. S. Personal of 424 Helmer & Staley:	Hydraulic Press Mig. Co.:	Jigs Saves Machining, Use of Danbitting. Offiver
Markal—A Paint in Stick Form for Marking Hot or Cold Materials	Improved Radial Hydraulic Pumps 692 "Hy-Draulic" Shaper and Shaper-planer, Rockford 42	Herbert. 470 Johansson Division of Ford Motor Co.: Ford Exhibits New Johansson Gage Set 48
Fifty-ton Dieing Machine	Hydraulic Sliding-head Unit, Sundstrand 39 Hydraulic Unit, W. F. & John Barnes Square-	Johns-Manville Corporation: Reducing Machine Vibrations
What is Shot-welding? 97 Modern Astronomy Relies on the Machine Shop 233	Hydraulic Units, W. F. & John Barnes Cylinder	Johnson, J. R.:
Small Aluminum Die-castings Made in Machines of Simple Design 244 A Million and a Half Brass Die-castings Yearly 361	Block Boring Machine and Hydraulically Operated Center and Pilot Support for Turret Lathe, I. F. Yooman	Custom-built Machines Can be Tailored to Fit the Work
Rupper and Wood Used for Thes in Forming	Hydraumatic Controller for Regulating Variable- speed Transmission, Reeves 62	Two-stage Piercing, Blanking, and Curling Die, 732
New Materials and New Methods in Lincoln-	Hydro-Motive Co.: Hydraulic Pump	Johnston, Paul R., Personal of 294 Jones & Lamson Machine Co.: Saddle Type Turret Lathes with Hardened Ways 18
Zephyr Manufacture 492 Now—Cast-iron Die-castings 569 Extensive Use of Gage-blocks Insures Ford Ac-	Hydro-Motive Co.: Hydrallic Pump Hydro-Power Presses, H.P.M 9 "Hydroscru" Power Unit, Buhr Two-way Drilling	Saddle Type Turret Lathe with Cross-sliding Turret
curacy 633 The Dies Used in Brass Die-casting 638		Judson, F. E.: Differential Ratchet for Imparting Slow Axial
An Air-conditioned Machine Shop Turns Out More Accurate Work	Ball Bearings on Out-of-round Shafts 785 "Hylift" Truck Streamline Five-ton 29	Movement to Feed-screw
Parta 729 What!—Riveting a Silent Operation? 761 Four Different Die-castings from One Set of	"Hy-Power" Hydraulic Equipment Drives Rivets Noiselessly, Charles O. Herb	for Varying Velocity of Stroke
	Machine and Machine and Hyler, John E.: Forming Bosses by Welding 198 Ball Bearings on Out-of-round Shafts 785 "Hyllift" Truck Streamline Five-ton 29 "Hy-Power" Hydraulic Equipment Drives Rivets Xoiselessly, Charles O. Herb 761 "Hy-Power" Hydraulic Riveting Machine, Haunifin 681 "Hyrolap"—A Hydraulically Operated Lapping Machine 464-B	Conveyor Belt 316 Junior Drill, Black & Decker 64-K Junior Drill, Black & Decker 1/2-inch 230
Herbert, Oliver: Use of Babbitting Jigs Saves Machining	Machine 64-B "Hyspeed" and General Utility Presses, Baldwin- Southwark 555	
Herringbone Gears be Designed Like Spur Gears? Can 727	Southwark	K "Kable Kord" Oil-resisting Belt 84
Can 722 Hermann, Karl L., Personal of 232-D, 760-A Herron J. H. Personal of 823 Hess, Donald P., Personal of 424 568-A	I	"Kable Kord" Oil-resisting Belt 84 Kahn, Julius, Personal of 760-B Kane & Roach, Inc.
Hiess, Donald P., Personal of 424, 568-A "Hi-Eff" Dynamometer, Taylor 21; Highdychack J. M., Personal of 21;	Ideal Commutator Dresser Co.: Device for Indicating Machine and Bearing Temperatures 93	Kasper, L.:
Hess, Donald P. Personal of 424, 3088-4 "Hi-Eff" Dynamometer, Taylor 21! Highducheck, J. M. Personal of 358 High Speed Hammer Co. Inc.: Riveting Hammer for Heavy Work 88 Hill. R. L. Obituary of 360-4 Hinman, C. W.; Dies for Producing Pierced and Formed Parts from Stran Stock 255	Temperatures 93 Supports for Commutator Grinders 562 Commutator and Slip-ring Resurfacing Stones 694	Mechanism for Timing a Revolving Shaft 67 Crank Motion with Dead Center Eliminated 117 Adjustable Feed Mechanism 379
Hill, R. L., Obituary of	Electric Tool for Marking Metals and Non- metallic Materials "Illigizing" Ferrons Metals to Resist Corrosion.	Obtaining Two Reciprocating Motions from One
Dies for Producing Pierced and Formed Parts from Stran Stock 2.5 Estimating Costs of Press Tools 4.5	"Ihrigizing" Ferrous Metals to Resist Corrosion. Heat, and Wear	Movement 717 Combination Blanking and Sizing Die 724 Pressure Equalizing Attachment for Wire-form
Forming Die with Collapsible Punch 598 Dimensioning Assemblies and Parts from a Com-	Die-filing Machine with Forced Lubricating System	Kauffmann, Alfred, Personal of
mon Point 796 "Hi-Power" Portable Hydraulic Riveting Machine.	Imports Increased in 1935, Japanese Machinery 549	Kearney & Trecker Corporation: Light-duty and High-speed Milling Machines 64-L Milyaukes Simpley Willing Machine Feyingel
		for Milling Front Axles
Portable Worm-thread Grinder 35:	Indexing Bars for Spacing Rivet Holes, Fixture	
in-steel a recent now-and steel of ingli	with Interchangeable, Joseph Waitkus 595	Keller, K. T.:
	with Interchangeable Joseph Waitkus 595 Indexing Fixture for Machining Compressor Ports. Charles C. Tomney Indexing Fixtures for Threading Machine. Work Aligning and	Management and Employe Cooperation in

Kent-Owens Machine Co.: Two New Milling Machines Kenyon, Fred G.:	I amount of the second	
	Lenney Machine & Mfg. Co.: Variable-speed Transmission Variable-speed Transmission with Motor Drive. 4 LePold, Louis H.: The Committee of the	Madison-Kipp Corporation:
Kershaw, F. A.: Rapid-production Boring Tools Ketcham, Howard, Personal of	LePold, Louis H.: Twisting and Straightening Diagrams	
Ketcham, Howard, Personal of 226 Kitcherr, Howard, Personal of 358 Kidder, Martin H., Personal of 696-8 Kilsby, R. P., Personal of 168-A Kingsbury Machine Tool Corporation: 232-D Fleximatic Drilling, Tapping, and Milling Mechine Chine	Twisting and Straightening Die	
Kilsby, R. P., Personal of	of the Times	Parts
Fleximatic Drilling, Tapping, and Milling Ma-		Four Different Die-castings from 749
Knudsen William of	Leo T. Parker License Plates, Making Automobile Liebich, Frank, Personal of Liebich, Frank, Personal of Liebich, C. A. The Sc. A. The Sc. A.	Magazine Feed for Landis Forming and Threading Machine
Automotive Industry Points Way to National	Liebich, Frank, Personal of 232	Machine. Januar Forming and Threading Magnet Alloy Having Unusual Power, Alnico—A Permanent. Januar Power, Alnico—A
Progress Industry Points Way to National Knupfer, Charles P., Personal of	Light Wave Equipment Country in Tool Steels, 66	D Agrier Alloy Having Unusual Power, Almico—A Magnets Hold the Work on a New Magnetic 337 Chuck, Permanent
Shielding Thin Sections of Punch to Reduce Hardening Strains Korfund Co. Inc.: 467	25-ton Evaporator Ruits by Shinks and American	Magnetic Chuck, see Chuck. 737
Seismo-Damper for Isolating Vibrations Kote-Rax—a Coating for Plating Racks 352	Welding Cable Designed for Wear Resistance	2 Mallory & Co., Inc., P. R.: 630
Seismo-Damper for Isolating Vibrations Kote-Rax—a Coating for Plating Racks Kron, Gabriel, Personal of Kutmore Tool Co.: Adjustable Hollow-mills Kux-Lohner Machine Co.: 419 Kux High-speed	Welding Machines for Assembling Automobile Parts Engine-driven Welder Welding Machine Performs Six Operation 22	5 Management and Employe Cooperation in Chrysler Plants, K. T. Keller Manhatta, B. T. Keller
Kux-Lohner Machine Co.: 419	Eabrication Territoria Unitations in	9 Plants. K. T. Keller Cooperation in Chrysler
Kux High-speed Automatic Die-casting Ma- chine 813	Quick-detachable Welding Cable Connector. 27 Electrode for 25-12 Stainless Steels	3 Manhattan, Inc.: 8 Belt Drive for Airplane Propellers
Lacquer 6 - 7	Electrode for 25-12 Stainless Steels 35 Welding School Well Attended 35 Electrode for Welding Bronze, Brass, and Copper.	3 Manipulator for Airpiane Propellers 452 ing ing Heavy Work When Weld- Mann, H. C., Personal of 399 4 Mann Instrument Co
Lacquer for Use in Chromium Plating, Stop-off, 164 Lafayette College, Seventy Years of Engineering at 531 Landis Machine Co., Inc., 232-C. Hydraulical Co., Inc.	Building Oil-well Drilling Equipment by the Use	Mann Instrument Co.:
Hydrauline U. Co., Inc.:	Lincoln Motor C. 73.	2 Manufacturer's Responsibility for Guarantee Given by Dealer. Leo T. Parker Manufacturing as Well as in Design, Engineering Required in Manufacturing as Well as in Design, Engineering
Work Aline and Beveling Attachment Machine. 92	New Materials and New Methods in Lincoln- Zephyr Manufacture Automobile Painting is the Last Word in Metal	Required in Marathan Electric Me. 789
Oil Type W. Machine	Lindberg Engineering 6	A Markal—A Paint in Stick Form for Marking Hot or Cold Materials
Drill-pipe Machine Arranged for Tightonia 350	Linde Air Products Co	Mort Cold Materials
reed for Landis Forming and mi 412	Columbium-treated Stainless-steel Welding Rod. 16: Medium-pressure Acetylene Generator. 239 A By-product of Acetylene Generator. 239	Marshall O Metal Toys
Work-holding Fixture 481	A By-product of Acetylene Generator 290 A By-product of Acetylene Generators 355 Oxy-acetylene Cutting Attachment 631 Link-Belt Co. 216	Grinding Cobalt Wire to a Diameter of One- half Millimeter
Machine Dandis Pipe Threading and city 028		
Landis Tool Co.: 780	Motorized Variable-speed Transmission 163 Self-aligning Roller-bearing Units 232.A Worm-gear Speed Reducers 351 Littell Machine Co. F. J. 351	Rapid Pressure Rooster for the
Semi-automatic Hydraulic Grinding Machine for Multi-diameter Shafts Land-Wheelwright Laboratories, Inc.: 33 I Polaroid, a New Glass with Remarkable Langelier Mfg. Co.: 437 I Swaging Machines	Worm-gear Speed Reducers 132 A Littell Machine Co. 5 3 55 Littell Machine Co. 5 5 Feeding and Straightening Machine for Wide Colled Stock ockwood, Charles S. Obituary of 632-C Duomatic High-speed Lathes 212	Materials, Condensed Review of Some Recently Developed.
"Polaroid." a New "Glass" with Remarkable	ockwood, Charles S. Obituary of 85 odge & Shipley Machine Tool Co 632 C	veloped veloped Equipment as a Means of Reducing Costs
Langelier Mfg. Co.: 437 I Swaging Machines	Fischer thart, How to Construct a. W. F.	ducing Costs Mathews Conveyor Co.: Ball-bearing Conveyor Rollers
Della Della Dilling Machine	Long Prident to	Bull-bearing Conveyor Rollers Conveyor Line with Coil "Up-ending" Device . 644 Maxipresses Used in Coining Parts for Automobiles 514
I appoint to a littled Chilling Machine 1940	Equipped for Grinding Long Holes 682 Machines Machines 682 Machines 51	Work-reversing Mechanism
Internal realing realing	No. of the state o	Compact Clutch-operating Mechanism 445
Joints. Lapping and Testing Cone Worm-gearing, Equip Lapping Manufacturing Cone Worm-gearing, Equip Lapping Manufacturing.	ubricant for Brass and Bronze, Cutting 424-A	Mead R L Process Produces Brilliant Zinc Plating, 441
Lapping Machine, Fellows Hourglass 79 L		Measuring Equipment, Van Keuren Improved Light 423
	unricating High-temperature Bearings W 15	Measuring Decimal
The manufactures to be Exhibited Section 100 fa	Schaphorsi bricating System for Machine Tools, Farval. 64-D bricating Under-feed Waste-packed Bearings 717 Caused by Lack of Caused by Lack of	Measuring the Finish on Timken Bearings 166 Measuring to Millionths Made Easy by the Use of 166 The Ultra-Ontimeter Mechanism Adjustable Feed. L. Kasper 379 Mechanism for Changing Direction of Measuring 197 Mechanism for Changing 1
Lathe, American Multi-production N. Stewart 127 Lather	trication of Paul and D. i	Switch Loint II Comment.
Lathe Carriage Travel. Monarch Direct-reading Lathe Centers Tipped with Tungsten Carbide 481 La	brication of Rearings Own 709	Mechanism for Disengaging Clutch at Remote . 784
Taile trinding Attachment and the 344 In	brication Problem, Gear 798	Mand Alternately, R. H. Holton 259
Device with Automatic Work to 183	brication Problems Require Thorough Study A. F. Brewer bricators, "Drip Drop" and "Opto-Matic" 201 Visible.	Mechanism for December 110
Lathe Lephand posterior	Visible	Conveyor Belt. F. E. Judson 316
Lathe, LeBlond 30-inch Universal Crankshaft 621 Lathe, Monarch Semi-automatic Engine 1684	Ysing Rule Co. 349 "Mezurall" Tape-rule kenweld, Inc. 566	Mechanism for Rapid Reciprocation of Slide. Oscillating Arm. J. E. Fenno
Lathe, Pratt & Whitney Co. Introduction 47 Lyo	n Iron Works. 781	Mechanism for Standard F. R. Zimmerman, 538
Lathe South in Control of the Second	17 tradale Lift-truck	Mechanism for Timing a Revolving Shaft.
Lathe, Springfield Heavy-duty Ball-bearing Geared Lathe, Sundstrand Automatic 10 220	Me	Mechanism with Four-direction Movement, Stock.
Lathe, Sundstrand Automatic 10-inch Stub 39 Mc. Lathe, Turret, see Turret. Lathe, Underneath Drive for South Bend "Work-Medical Shop"	Str. Frank I Downwal &	Chain Feed Paul Gradzinski 380
Lathe with V-belt Drive, South Bend 9-inch S62 Med Workshop.	Clure, L. H., Personal of 168-A Jonegal Mfg. Co. 488	Mellowes & Co., Ltd. 589 A New Metal-spraying Processing F. H. Mayoh 589
Lathes and Star Centering Machines, Lo-Swing Mel		A New Metal-spraying Process 651 Metlozing — A New Metal-spraying Process 651 dereury Mg. Co.:
and Star Centering Machines, Lo-Swing McLathes, Atlas Metal-cutting Spindle Nose for Monarch Star Centering Machines, Lo-Swing McLathes, Cam-lock Flanged Spindle Nose for S58		Electric Trucks Heavy-duty Electric Truck Trailer with Pneumatic Rubber Tires 239 489 489 489 489 489 489 489 489 489 48
Lathes Cincipant Precision Ball-bearing Rench 557	M	
Lathes, Cincinnati Tool-room and Heavy-duty 35 Lathes Emipped with Tapered and Keyed Spindle Nose, Reed-Prentice	41 W	board Thin Metal Sheets Bonded to Card-
Lathes, Lodge & Shipley High-speed 813 Mac Lathes, Monarch Hydraulia 1213 Mac	Arthur, J. E., Personal of	letal Engineering and Die Design, A New College Course in Pressed tetal Exposition, The Seventeenth Annual 129 letal Finish Unmarred by Drawing Operation 169
Lathes, Pratt & Whitney Tool-room of 60 S Lathes, Reed-Prentice Sixteen-speed Tool-room 149 Mac	uccess. Attention to May Change Failure to	
Lathes, Tapered and Karris 1997 284 Mood	hine Designer Must Follow the Trend of the lines. Bernard Lester	etal Products Exhibit in New York 167 etal-protecting Finish for Machinery 671 etal-protecting Finish for Machinery 671 etal-spraying Process, "Mellozine" 4 Nov. 671
LeBiond Maci	hine Shop, Modern Astronomy Relies on the	etal-products Exhibit in New York 1928 tetal-protecting Finish for Machinery 167 etal-spraying Process, "Mellozing"—A New 671 etal-spraying Process, The Possibilities of the 186 etals Used in Die-casting. Charles H. Hughes 186 etalic Surfaces to Resist Wear and Constances 186
R. H. Potts LeBlond Machine Tool Co. R. K.: Drum Type Crankshaft Latte	The proceeding of the Party of	etallic Surfaces to Resist Wear and Corrosion, tetr. A Noise-indicating 96 dezurall' Tape-rule Lufkin 566 Equipment for Cattlery 566 Equipment for Cattlery 566
30-inch Universal Crankshaft Lathe 621 R.	vidends. H. Goldherg in Tools in Navy Yards. Replacement of J. Walker in Tools. The Trend is Toward Lower orking Height in	Mezurall' Tape-rule, Lufkin
Lathes Keyed Spindle Nose for LeBlond W Leeds M. E. Personal of 755 Mach Leeds A. Northrup Co. 760 B, 823 Be	one Tools. The Trend is Toward Lower orking Height in ine Tools. Typical Applications of Roller arings to S. M. Weekstein 774 inerv and Fnemployment 774	Cone Worm-gearing Lapping, and Testing
Leeds & Northrup Co. 760 B, 823 Be Mach Micromax Speed Recorders Mach Mach Mach Micromax Total Mach M	inery and Chemplestein	Finishing Machine for Internal Gears
Lees, E. J. Personal of Recording Controller	inery. Increased Employment Caused by proved inery. Oakite Products Increased 52	tions in Testing Mating George Condi-
duty Turret Lettered Pipes on Heavy.	inery Oakite Products Increases Jobs by the of State of Products Increases Jobs by the inery Reduced Canadian Duties on 331 Minery Show Marketalain Duties on 355 M	New Plant Opened to Take Care of Increased Business 616 Business 632-B cromax Speed Recorders, Leeds & Northrup 561 cromax Temperature Recording Controllers
March Sail III De Held Faels in	mery Show Marked Increase, Exports of In-	cromax Speed Recorders, Leeds & Northrup. 561 cromax Temperature Recording Controller. 754 cometer Calipers, Brown & Sharpe
Lehand-Gifford Co.: 320 Machi Hydraulic Step-by-step Drilling of Deep Holes. 601 Mack.	rtgaged Ruilding Lan Erected in a Mic	Toscope for Toolmakers, Stupakoff Comparator
	9	Toscopic Examination, Illuminator for 231 fina, S. J. Personal of 358 l. Bethlehem New Continuous Sheet 766
	**	

Mill, see also End-mill, Hollow-mill, etc. Miller Electric Mfg. Co., Inc.: "Wonder" Alternating-current Welders	Mounting for Boring Mill Table, Simplified Anti- friction Bearing	"Nu-Mol" Hacksaw Blades, Disston
Milligan & Wright Co.: Angstrom Lamp Blueprinting Machine 816 Milling and Profiling Machines, Pratt & Whitney High-speed Vertical 808	Self-locking Split Pulley 458 Mult-Au-Matics, Speeding Automotive Production by Operations on 522 Multi-Hydromatic Welding & Mfg. Co.:	0
Lewis Horizontal		Oakite Products, Inc.: Number of Jobs Increased by the Use of Ma- chinery.
Milling, Countersinking, Reaming, and Tapping Machine, Crankshaft Drilling Milling Cutters, see Cutters, Milling Cylinder Blocks by the Rigidmil Automatic	Parts 175 175 176 176 177 17	Chinery. 331 Obermier, J. G. Obituary of 424-A OBrien, Miles W., Obituary of 632-C Ogsbury, James S., Personal of 232-D Ohio Locomotive Crane Co.: Variable-speed Hydraulic Transmission 290 Ohio Machine Tool Co.:
Milling, Drilling, and Boring Attachment, High-	N	Ohio Locomotive Crane Co.: Variable-speed Hydraulic Transmission 290 Ohio Machine Tool Co.:
Milling, Drilling, and Boring Machines Built to Meet Requirements of Individual Shops	Nateo High-production Drilling, Reaming, Boring, and Facing Machine	Ohio Machine Tool Co.; Universal "Perfection" Shaper
Milling, Drilling, and Tapping Machine, Kingsbury Fleximatic Milling External and Internal Threads Simultane	Single-spindle Automatic Screw Machine 36 Automatic Chucking Machines of Four- and	Boring, Drilling, and Milling Machine 84 Universal Shaper Table 617 Ohio "Use Tax" a Protective Tariff Against Other
ously, Hall Planetary Machine for	Six-spindle Types	States? Is the 463 Oil-cups for Machine Lubrication, Alemite 561 "Gil-Cut" Metal-cutting Machine, Racine 228
Milling Machine, Cataract Precision	motive Industry 549 Natco Deep-hole Drilling Machine 614 National Broach & Machine Co.: Machine for Crowning Internal Gear Teeth 559	Oil for Hydraulic Transmissions
Milling Machine Fourned for Million Front 1.1. 025	National Carbon Co., Inc.: Using Carbon Rods, Plates, and Paste to Facilitate Welding	35-ton Two-column Press 629 190-ton Horizontal Swaging Press with Indexing Control Horizontal Swaging Press with Indexing 679 300-ton Vertical Press 754 Remote Controller for Oilgear Feeds 757
Milling Machine for a Wide Range of Work,	Filters	Pushemair Press for Assembling valve Guide
Milling Machine for Automobile Crankshafts, Producto-Matic. 343 Milling Machine for Hand or Semi-automatic	National Machine Tool Builders' Association: Machine Tool Exposition in Cleveland	Bushings in Cylinders 812 Oil, Houghton Grinding Paste and Soluble Grinding Paste and Soluble Grinding Oil, Polymerized Wax Sulphur-base Cutting 819
Operation	Standards for Surface Grinders of Reciprocating Table Type Norman D. MacLeod Elected President of As-	"Oil Spot" Welder with Hydraulically Actuated Electrodes, Federal
Milling Machine, Ohio Boring, Drilling, and 84	sociation 271 Association Receives Outstanding Award 668 Report on Spring Meeting in Chicago 672 National Machinery Co.: Broadening Use of the Coining Process 514	O. K. Tool Co., Inc.: Adjustable Shankless Bits and Tool-holders 48
Milling Machine with Adjustable Head, Davis & Thompson Drum Type	Broadening Use of the Coining Process 514 National Metal Trades Association: Thirty-eighth Annual Meeting Held in New	Oliver Instrument Co.: Face-mill Grinding Machine
and Plain	Navy Yards, Replacement of Machine Tools in R. J. Walker 438	Universal Cutter-grinding Machine Oliver Machinery Co.: 18-inch Metal-cutting Band Saw
Milling Machines, Kent-Owens 28 Milling Machines, Motor Drive for Burke 686 Milling Machines, Van Norman Exhibits New Line of 58	Nealey, J. B.: Heat-treating Diversified Work on a Quantity	Olmstead, George E. Personal of "Omniversal" and Plain Milling Machines. Brown & Sharpe & Sharpe 45
Milling Machines were Rebuilt for Machining New Engine Block, How Milling, Multi-toothed Adjustable Sween Tool for	Neesham, George A. Personal of	& Sharpe "Opto-Matic" and "Drip-Drop" Visible Lubricators 349 Ordering Malleable Castings, Directions for
Milling, Planing, Boring, and Drilling Machine,	Neill & Co., Ltd., James: Permanent Magnets Hold the Work on a New Magnetic Chuck	a Three-dimensional Perspective
Milling Plymouth Cylinder Blocks—Correction. 656 Milling, Sundstrand "Electromil" for High-speed. 39 Milling Trunnions in Accurate Alignment, Fixture	Newall Automatic Universal Thread Grinding Ma- ofine	Oster Mfg. Co.: "Rapiduction" Pipe Threading and Bucking-up Machine
for Milwaukee Simplex Milling Machine Equipped for Milling Front Axles Simplex Milling Machine Equipped for Milling Front Axles Size Mitchell, Roger E., Personal of Size Mitco Pin-Sulice Turning Tools Size Mitco Pin-Sulice Turning Tools	New Britain-Gridley Machine Co.: Automatic with Novel Feature	Machine with Cutting Torch Prepares Pipe Sections for Welding 149
Mitco Pin-Splice Turning Tools 346 Modern Engineering Co.:	cessibility and Chip Clearance	Labor Cost Washington for Discongging Chitch
Modern Engineering Co.: Weldmaster Torch Modern Tool Works Division of the Consolidated Machine Tool Corporation: Self-opening Stud-setters 227	Casting 165 Die-cast Zinc-alloy Zipper Fastener 737 Niagara Machine & Tool Works: Inclinable Press of Improved Design 299	Overload Rener Mechanism for Dischagang Control at Remote Point, Pneumatic. J. F. Fenno. 315. Owens, Maurice, Personal of 232-D Oxweld Cutting Attachment 631 Oxy-acetylene Cutting, Increasing Importance of 260 Oxy-acetylene Cutting, Increasing Importance of 260
Mold-cutting Machines, Gorton Three-dimensional Die- and Molding Compounds with Graphite Added. 613	Inclinable Press of Improved Design 222	Oxy-acetylene Cutting, Increasing Importance of 200 Oxy-acetylene Welding, see Welding.
Phenolic	Small-size "Master Series" Press 478 Power Squaring Shears 756 Nibbling Machines of New Size, Gray 148 Nibbling of Airplane Struts, Templets Facilitate	P Packaging Machinery Involves Ingenious Features. 567
Diesel Engines Molybdenum Makes Stainless Stoel Regist Highly 737	Nibbling of Airplane Struts, Templets Facilitate Accurate. 576 Nicholson & Co., W. H.:	Packard Motor Car Co.: Ingenious Devices Used in Producing the
Molybdenum-iron Castings Withstand 3000-pound Pressures	Hydraulic Valves	Packard Transmission 498 Broaching Crankcases at the Packard Plant. 593 Vacations and Retirement Pay for Factory Workers 735
Molybdenum Steel Eliminates a Gear-grinding Op- eration. Chromium Molybdenum Steel Used in Fabricating the "China	per Square Inch	Packer Machine Co.: Continuous Polishing and Buffing Machine 342 Paint in Stick Form, Hot or Cold Materials 337
Molyhdenum Steel Used in Fabricating the 'China Clipper,' Chromium- 405 Monarch Machine Tool Co.: Semi-automatic Engine Lathe 40	Nickel Alloy Iron for Gears	Marked by Painting is the Last Word in Metal Finishing.
Modernized Heat-treating Department 200 Direct-reading Dials for Indicating Carriage Travel 481 Cam-lock Flanged Spindle Nose for Monarch	One-half of All the	Pangham Corneration:
Hydraulic Multi-speed Lathes 756		Parker, Leo T.: Machinery Sold on Installment Plan Erected in 128
Monnier Bros. Inc.: Small-size High-speed Air Grinder 232-I Moore, Charles A., Personal of 558 Morland Jules A. Personal of 239-I	Nickel Steel Improves Efficiency of Mine Skips. 675 Nickel Steels and Alloys, New Applications of 318 Nickel Steels and Alloys, Recent Applications of 134	Machinery Sold on Installment Tall 128 Manufacturer's Responsibility for Guarantee Given by Dealer Responsibility for Noise and Vibration Caused
Moore, Charles A., Personal of 568 Morland, Jules A., Personal of 232-F Morris Machine Tool Co.: "Mor-Speed" Radial Drilling Machine 686 Morse, Arthur H.:	Nickel Steels, Capacity of Buses Increased by Using 19 10 10 10 10 10 10 10 10 10 10 10 10 10	Firm's Liability for Contracts Made by Employee
Was This an Early Type of Ball or Roller Bearing?	Noise and Vibration Caused by Manufacturing Op- erations, Responsibility for	Failure to Fulfill Contracts Because of Strikes 600 Discharged Employe's Right to Bonus Payments 663 Firm's Responsibility for Salesman's Promises. 788
Facilitating the Selection of Silent Chain Drives 264 "Mor-Speed" Radial Drilling Machine, Morris 686 Morton, H. T.:	"No-Mar" Wrench for Hexagonal Fittings 163 Norma-Hoffmann Bearings Corporation:	Parker Rustproof Co.: Ronderizing Process Installed by Buick Motor
Lubrication of Ball and Roller Bearings 708 Moses, Adolph: Modified Geneva Movement of Improved Design 588	Cartridge Type Ball Bearing	Pasts and Soluble Crinding Oil Houghton Grind-
Motion Picture of Stainless Steel 320 Motion Picture of Stainless Steel 320 "Matadrive" Peoples Self-contained Varianced	Norris. E. R., Personal of	Patent Lawyer as a Business Advisor. Joshua R. H. Potts Patents, Barber-Colman Single-position Hob 333 Patented Machines. Repairing, Howard S. Bryant 653
Motor and Pump Motors, Westinghouse Fan-cooled 35 Motor Base, Allis-Chalmers Automatic 48 Motor Designed for Smooth Starting, Emerson 42 Motor Designed for Smooth Starting, Emerson 42 Motor Designed Factor Smooth Starting	Norton Co.: New Designs of Grinding and Lapping Machines	Pay, We are All Helping to
Sebastian	Crankpin and Camshaft Grinding Machines 64-P	Paorless Machine Co :
Motor Drive, Saving Power in Machine Shop with Two. W. F. Schaphorst	36-inch Roll Grinding Machine	High-duty Metal Sawing Machine
plication 64-1 Purolator Filters Used in Chain Manufacture. 320 Purolator Air Filter Removes Oil Fumes in	Nose, Reed-Prentice Lathes Equipped with Tapered	Perforating Machine, Dilks Automatic Plate 689
Sand-blasting	Notching and Perforating Dies, Whistler Ad-	Phillips, T. I., Personal of 168-B Phillips, William H., Personal of 821 Photo-cell Control for Industrial Applications 755
Motor Shaft Bushings, Expansion Reamer for		Photo-electric Cut-off Device, Toledo Scale with. 18 Photo-electric Relay, G-M Piercing Press, Flexo Cutting-off, Stampings, and 815
Motors, Cadmium-nickel Alloy for High-speed. 33 Motors, New Westinghouse 68 Motors, Over-lubrication of Electric 32	Numberall Stamp & Tool Co., Inc.: Platform Type Numbering Machine	Pike & Co., E. W.: Flash-O-Lens Magnifying Device
Motors, Sterling Speed-Trol	Numbering Stamp with Quick-change Feature. 75: Numbering Machine, Platform Type 9	Pillow Blocks with Spherical Roller Bearings. SKF

Pipe Elbows Made by Quantity-production Methods, Smoke- 239	Progunier Safety Chuck Co.: "True-Grip" High-speed Tapping Attachment, 628	Reed-Prentice Corporation: Sixteen-speed Tool-room Lathes
Pipe Facing and Beveling Attachment, Landis. 153 Pipe Sections for Welding, Machine with Cutting	"True-Grip" High-speed Tapping Attachment. 628 Production Instrument Co.: Limit witch Operated by One-half Ounce	Brass Die-casting Machines
Torch Prepares Pipe Threading and Bucking-up Machine, Oster "Rapiduction". 746	Pressure	Lathes Equipped with Tapered and Keyed
"Rapiduction"		Reel, Henry & Wright Automatic Motor-driven
Pipe Threading Machine Arranged for Tightening	Crankshafts	Stock
Drill-pipe Joints, Landis	Vertical Milling and 808	Reesey, Charles M., Personal of232-E Reeves Pulley Co.:
Pipe Wrench with Cross-locked Jaw. Walworth. 152 Pipes and Fittings. Recommended Standards of Wrought-iron and Wrought-steel	Profits on Unprofitable Business, Spending 114 Progress in the Mechanical Industry, To the Men	Hydraumatic Controller for Regulating Variable- speed Transmission 62 Automatic Variable-speed Ratchet Control 87
Pipes on Heavy-duty Turret Lathes, Threading	Responsible for Continued. Ralph E. Flanders. Projectors, Bausch & Lomb Contour Measuring. 58 Projectors And Projectors One Vision Control of Projectors	Giant Variable-speed Ratchet Control
Piston Anodizing Tank with Cooling and Ventilat-	Promotion, A Method of Evaluating Qualifications of Employes for	Giant Variable-speed Transmission
Piston Grinding Machine, Van Norman High-speed 348	Prosser & Son, Thomas:	M. L. Eckman 590 Regimentation? Does Industry Again Face 695 Reinecker Heavy-duty Spline and Pinion Hobbing
Pistons for the New Buick, Machining	Widia Cemented-carbide Tool Grinder 349	Machines
Pistonel—a New Aluminum Alloy Piston-ring, Tool for Expanding, Joseph Waitkus Pistons, Bore-Matic Precision Boring Machines for	Cemented-carbide Cutting Tools in Present-day	Acetylene Generator for Soldering and Brazing. 154 Relay, G-M Photo-electric
Cylinder Blocks and	Noark	Relyea. John:
Planer Rockford "Hy-Draulie" Shaper and Shaper	Protective Coatings for Metal and Non-metallic Surfaces, Non-porous	What to Specify in Buying Press Dies 705 Repairing Patented Machines. Howard S. Bryant 653 Replacement Program that Paya Dividends, A Ma-
	Protectoglo Combustion-safeguard Equipment 620	chine Tool. H. Goldberg
Planetary Machine for Milling External and In- ternal Threads Simultaneously, Hall 751 Planing, Milling, Boring, and Drilling Machine,	Pulley Bandage, "Contrasit" Belt	Oil-resisting Pneumatic Hose
Plaskon—a New Plastic Material	Pulley, Self-locking Split. Frank Muir 458 Pulleys, Producing Accurate Bores in Pressed-	Resistance Standards, New Alloy Adopted for Electrical. 737 Resurfacing Stones, Ideal Commutator and Slip-
Plastic Material of High Strength and Good Ma-	Pump, Acme Motor-driven	Resurfacing Stones, Ideal Commutator and Slip- ring
Plastic Material of Light Weight, Acid-resisting. 540 Plastic Material, Plaskon—a New 169	Pump Bodies; Boring, Facing, and Chamfering Gear	ring 694 Reversing Mechanism, Work- F. H. Mayoh 589 Rhodium Resists Hot Flowing Glass, Alloy of
Plastic Material that is Non-bleeding, A New 209 Plastic Molding Press, Defiance Hydraulic 689	Pump, Control Valve, and Circuit, Sundstrand Hydraulic. 347	Platinum and
Plastics that Meet Special Needs, Two New	Pump, Hydro-Motive Hydraulic	Rickert-Shafer Co.: Collapsible Tap with Micro Adjustment 162
Phenolic 336 Plastics. The Broadening Field for Synthetic 138	Pump, Ruthman Gusher Machine Tool Coolant. 628 Pumps, Brown & Sharpe Rotary Helical-geared 352	Rigidmil Automatic Process, Milling Cylinder Blocks by the
Plate Planer with Electric Feed, Southwark 413 Plating and Burnishing Equipment, Hanson-Van	Pumps for Lubricating Systems, Roper Rotary. 228 Pumps, Improved Radial Hydraulic 692 Pumping Unit, Farval 64-D	Riveting a One-man Job, Special Pneumatic
Plating Machine Udvlite Semi-automatic 89	Punch, Metal-faced Rubber Stripper for Piercing	Hammers Make Riveting a Silent Operation? What!—Charles O. Herb. 761
Plating. Mazic Process Produces Brilliant Zinc. 441 Plating. Udylite Ball Anodes for 231	William Steuer Punch to Reduce Hardening Strains, Shielding Thin Sections of. W. T. Koehler	Riveting Fixture for Necked Stud. C. Cole
Platinum and Rhodium Resists Hot Flowing Glass, Alloy of 209	Purolator Air Filter Removes Oil Fumes in Sand- blasting. 355	Riveting Hammer for Heavy Work 88 Riveting Machine, Hanna Motor-diven Hydraulic 553 Riveting Machine, Hannin "Hi-Power" Portable
Plymouth Flywheels an Hour, Machining Forty- four "Polaroid," a New "Glass" with Remarkable	Purolator Double-type Filter for Industrial Application	Riveting Machine, Hannifin "Hi-Power" Portable
Properties 437	"Pushemall" Press for Assembling Valve Guide	Hydraulic. 59 Hydraulic 681 Robertson, C. M., Personal of 168-A
Polishing and Buffing Machine, Packer Continuous 342	Bushings in Cylinders, Oilgear	Rockford Drilling Machine Co.: Crankshaft Drilling, Milling, Countersinking,
Polishing and Bumng Machine. Selective-speed. 625 Polishing. Band-sawing, and Filing Machine with Deep Throat	Pyritz, George L.: Disk-piercing Die with Automatic Indexing	Reaming, and Tapping Machine
Polishing, "Do-All" Machine Equipped for Band. 420	Automatic Two-way Air Valve for Operating	Improved Inclinable Press
Polishing Wheel, Columbian Fiber	Turret Clamp	"Hy-draulic" Shaper and Shaper-Planer
Portable Electric Tool, see Electric. Porter-Cable Machine Co.:	Pyrometer Instrument Co.: Combination Surface and Needle Pyrometers 549	Roeth, Athert C., Personal of
Carbo Hydraulic Lathe	Pyrometers, Combination Surface and Needle 549 Pyrometers, Improved Motor Drive for Foxboro	Rolfe, John, Personal of
		099 4
The Patent Lawyer as a Rusiness Advisor 700	Pyrotrol Safety Device for Lighting Gas Furnaces,	Rolle Grinding Machine, Norton 36-inch 547 Roller-bearing Units, Link-Belt Self-aligning 232-A Roller Bearings, Lubrication of Ball and H. T.
The Patent Lawyer as a Business Advisor 799 Power Unit, Buhr Two-way Drilling Machine and	Control	Morton. 709 Roller Bearings, Measuring the Finish on Timken 166
The Patent Lawer as a Business Advisor 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic	Control . 91 Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol . 812	Morton
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, 62 Powers, Frank B., Personal of 696-B Pragst, George G., Personal of 95	Control. 91 Pyrotrol Safety Device for Lighting Gas Furnaces. 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818	Morton Roller Bearings, Measuring the Finish on Timken 166 Roller Bearings, SKF Pillow Blocks with Spherical Roller Bearings to Machine Tools, Typical Applications of SM Weckstein 774
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic 64-G Powers, Frank B., Personal of 696-B Pragst, George G., Personal of 95 Pratt & Whitney Co.	Control. 91 Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278	Morton Roller Bearings, Measuring the Finish on Timken 166 Roller Bearings, SKF Pillow Blocks with Spherical 346 Roller Bearings to Machine Tools, Typical Applications of, S. M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.:
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine 64-G Ex-Cell-O Hydraulic 62 Powers, Frank B., Personal of 696-B Pragst, George G., Personal of 95 Pratt & Whitney Co.: New P & W Jig Boring Machine 26 New Machines Exhibited by Pratt & Whitney 60	Control. 91 Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278	Morton Rearings Measuring the Finish on Timken Roller Bearings, SKF Pillow Blocks with Spherical 346 Roller Bearings to Machine Tools, Typical Applications of S. M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.:
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Powers, Frank B. Personal of 696-B Pragst, George G. Personal of 95 Pratt & Whitney Co.: New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney. 60 Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed. 92	Control. 91 Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of	Morton Mo
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Description of 95 Prasts, George G., Personal of 95 Pratt & Whitney Co. 95 New P & W Jig Boring Machine 86 New Machines Exhibited by Pratt & Whitney 71 Tilting Table for Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 92 Camlock Serrated-blade Reamers 157 Model C Lathe 157 Model C Lathe 157 Model C Lathe 157 Migh-speed Vertical Milling and Profiling Machine 157	Control. 91 Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol. 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel	Morton. Morton. Roller Bearings, Measuring the Finish on Timken 166 Roller Bearings, S K F Pillow Blocks with Spherical. Roller Bearings to Machine Tools, Typical Applications of, S, M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems 228 Rose, Robert S, Personal of 821 Ross Operating Valve Co.; Ross Operating Valve Co.; Solenoid-controlled Air Valve 683
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Go-presonal of 95 Pragst, George G., Personal of 95 Pratt & Whitney Co. 27 New P & W Jig Boring Machine 80 New Machines Exhibited by Pratt & Whitney 80 Tilting Table for Jig Boring Machine 80 Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers 157 Model C Lathe 27 Model C Lathe 27 High-speed Vertical Milling and Profiling Machines 808 Prescolow—a New Alloy that Cuts Weight of Rail-	Control. Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol. Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel. R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for 228	Morton. 709 Roller Bearings, Measuring the Finish on Timken 166 Roller Bearings, S K F Pillow Blocks with Spherical. 346 Roller Bearings to Machine Tools, Typical Applications of, S, M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems 228 Rose, Robert S., Personal of 821 Ross Cop. David J.: Ross Operating Valve Co.; Solenoid-controlled Air Valve 683 Rotary File Co.: Hand- and Mill-cut Rotary Files Rotary Movement for Overating Shell Hopper.
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Dring Machine Series Whitney Co. New P & W Jig Boring Machine Series Whitney Co. New Machines Exhibited by Pratt & Whitney Silving Table for Jig Boring Machine Series Model C Lathe Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers Model C Lathe Lather Series Model C Lathe Series S	Control. Pyrotrol Safety Device for Lighting Gas Furnaces, Bristol. Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel. R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for 228	Morton. Morton. Roller Bearings, Measuring the Finish on Timken 168 Roller Bearings, S K F Pillow Blocks with Spherical. Roller Bearings to Machine Tools, Typical Applications of, S. M. Weckstein. Rollers, Mathews Ball-bearing Conveyor. 484 Roper Corporation. Geo. D.: Rotary Pumps for Lubricating Systems. 228 Rose, Robert S., Personal of S21 Ross Co., David J.: Ross Operating Valve Co.; Solenoid-controlled Air Valve. 883 Rotary File Co.; Hand- and Mill-cut Rotary Files. Pulsating. J. E. Fenno. Pulsating. J. E. Fenno. 783 Rotary Rovement for Operating Shell Hopper. Pulsating. J. E. Fenno.
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696-B Pragst, George G. Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney 70 New Machines Exhibited by Pratt & Whitney 80 Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers Model C Lathe High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, Bliss Automatic High-speed 224 Press Bliss Automatic High-speed 224 Press Bliss Automatic High-speed 622 Press Bliss Automatic High-speed 224 Press Blase Boom All-welded 622	Control Safety Device for Lighting Gas Furnaces, Bristol Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine Radiator Tubes, Kane & Roach Machines for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing, Welded Tubular 384 R& L. Tools: 384	Morton
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine. Ex-Cell-O Hydraulic Drilling Machine. Pragst, George G., Personal of 95 Pratt & Whitney Co.: New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney. Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed. 92 Camlock Serrated-blade Reamers. 157 Model C Lathe High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity. 405 Press, American Hydraulic Straightening. 416 Press, Bliss Automatic High-speed. 228 Press Brake, Boom All-welded. 622 Press Brake, Boom All-welded. 622 Press, Cleveland Four-noint Suspension. 414 Press Clutches, Electrically Controlled "Air Operative" for Power review of the Power of	Control Safety Device for Lighting Gas Furnaces, Bristol Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine Radiator Tubes, Kane & Roach Machines for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing, Welded Tubular 384 R& L. Tools: 384	Morton
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Office of the Pragst, George G. Personal of 95 Pragst, George G. Personal of 95 Pratt & Whitney Co.: New P & W Jig Boring Machine 80 New Machines Exhibited by Pratt & Whitney 80 Tilting Table for Jig Boring Machine 80 Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers Model C Lathe High-speed Vertical Milling and Profiling Machines. 93 Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 97 Press, Bliss Automatic High-speed 97 Press, Cleveland Four-noint Suspension 97 Press, Cleveland Four-noint Suspension 97 Press, Cleveland Four-noint Suspension 97 Press Clutches Electrically Controlled "Air Operator" for Power Press, Plant Memorial Plants Medicine 96 Press of State Press Plants Medicine 96 Press of State Plants Suspension 97 Hydraulic Drilling Machine 97 Press of Clutches Electrically Controlled "Air Operator" for Power Plants Drive 100 Press of State Plants Suspension 97 Hydraulic Drilling Machine 97 Press of State 98 Press of Stat	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Gil-Cut" Metal-cutting Machine of Radiator Tubes, Kane & Roach Machines for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: 384 Ransom Grinding Machine Co.: 289 Ransom Grinding Machine Co.: 814	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic . 64-6 Powers, Frank B., Personal of . 69-6-8 Pragst, George G., Personal of . 95 Pratt & Whitney Co.: New P. & W. Jig Boring Machine . 27 New Machines Exhibited by Pratt & Whitney . 60 Tilting Table for Jig Boring Machine . 86 Die-sinking Cutters Designed for High-speed . 92 Cambook Serrated-blade Reamers . 157 Model C Lathe . 277 High-speed Vertical Milling and Profiling Machines 277 High-speed Vertical Milling and Profiling Machines . 277 High-speed Vertical Milling and Profiling Machines . 277 High-speed Vertical Straightening . 446 Press, Biss Automatic High-speed . 284 Press, Cleveland Four-noint Suspension . 414 Press Clutches Electrically Controlled . 417 Press Clutches Electrically Controlled . 627 Press, Deflance Hydraulic Plastic Molding . 685 Press, Double Roll Feed and Scrap Cutter for Double-action . 441 Press, Farrel-Birmingham Hydraulic . 441 Press, Farrel-Birmingham Hydraulic . 441	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Stampings 298 Radiator Tubes, Kane & Roach Machine 67 Radium as a Means of Inspection. J. F. Springer 402 Radium as a Means of Inspection. J. F. Springer 384 R & L. Tooks: Turning Welded Tubular 384 R & L. Tooks: Turning Finding Machine Co.: High-speed Grinding Machine Co.: High-speed Grinding Machine 1814 "Raniduction" Pipa Threading and Bucking-up Machine Co.: Machine	Morton. 709 Roller Bearings, Measuring the Finish on Timken 168 Roller Bearings, SKF Pillow Blocks with Spherical. 346 Roller Bearings to Machine Tools, Typical Applications of, S. M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems 228 Rose, Robert, S., Personal of 821 Ross Co., David J.: Ross Operating Valve Co.; Solenoid-controlled Air Valve 683 Rotary File Co.; Hand- and Mill-cut Rotary Files Rotary Movement for Operating Shell Hopper, Pulsating, J. E. Fenno 780 Rotol-Broaches for Circular Surfaces, Bullard 288 Rotor Air Tool Co., Electric and Air Tools 24 Pneumatic Drill Rousselle Safety Device for Punch Presses 161 Rousselle Parts, Charles O. Herb Rubber Plays an Important Part in the New
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic . 64-6 Powers, Frank B., Personal of . 69-6-8 Pragst, George G., Personal of . 95 Pratt & Whitney Co.: New P & W Jig Boring Machine . 27 New Machines Exhibited by Pratt & Whitney . 60 Tilting Table for Jig Boring Machine . 86 Die-sinking Cutters Designed for High-speed . 92 Cambook Serrated-blade Reamers . 157 Model C Lathe . 16-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Stampings 298 Radiator Tubes, Kane & Roach Machine 67 Radium as a Means of Inspection. J. F. Springer 402 Radium as a Means of Inspection. J. F. Springer 384 R & L. Tooks: Turning Welded Tubular 384 R & L. Tooks: Turning Finding Machine Co.: High-speed Grinding Machine Co.: High-speed Grinding Machine 1814 "Raniduction" Pipa Threading and Bucking-up Machine Co.: Machine	Morton. 709 Roller Bearings, Measuring the Finish on Timken 168 Roller Bearings, SKF Pillow Blocks with Spherical. 346 Roller Bearings to Machine Tools, Typical Applications of, S. M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems 228 Rose, Robert, S., Personal of 821 Ross Co., David J.: Ross Co., David J.: Ross Coperating Valve Co.; Solenoid-controlled Air Valve 683 Rotary File Co.; Hand- and Mill-cut Rotary Files Rotary Movement for Overating Shell Hopper, Pulsating, J. E. Fenno 780 Rotol-Broaches for Circular Surfaces, Bullard 288 Rotor Air Tool Co., Electric and Air Tools 24 Pneumatic Drill Rousselle Safety Device for Punch Presses 161 Rousselle Safety Device for Punch P
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Office of the Prasts, George G. Personal of 69-68 Pragst, George G. Personal of 95 Pratt & Whitney Co.: New P. & W. Jig Boring Machine 86 New Machines Exhibited by Pratt & Whitney 60 Tilting Table for Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers 157 Model C Lathe High-speed 92 High-speed Vertical Milling and Profiling Machines 97 Pressolor—a New Alloy that Cuts Weight of Rail-way Trucks and Increases Capacity 405 Press, American Hydraulic Straightening 41-6 Press, Bliss Automatic High-speed 62 Press Brake, Boom All-welded 92 Press, Cleveland Four-noint Suspension 41-6 Press, Cleveland Four-noint Suspension 41-6 Press, Cleveland Four-noint Suspension 685 Press, Double Roll Feed and Scrap Cutter for Double-action 98-7 Double-action 98-7 Press, Farrel-Birmingham Hydraulic 98-8 Press, Greenerd Hydraulic 98-1 Press for Assembling Valve Guide Bushings in Cylinders, Oilcear "Pushemall" 98-1 Press, Greenerd Hydraulic 98-1 Press G	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Prolymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 8 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 8 R & L Tools: Turning Tool 289 Ransom Grinding Machine Co.: 814 "Raviduction" Pipe Threading and Bucking-up Machine. 0ster 1814 Rasmussen Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Co.: Poser Sawing Machine Co.: Poser Sawing Machine Co.: Poser Sawing Machine Slow Axial Movement to Feed-screw, Differential. F. E. Judson 116 Ratchet for Imparting Slow Axial Movement to Feed-screw, Differential. F. E. Judson 116 Ratchet for Imparting Variable Rotary Movement, Combination Roller Clutch and J. E. Fenno. 187	Morton. 709 Roller Bearings, Measuring the Finish on Timken Roller Bearings, S K F Pillow Blocks with Spherical. 8 K F Pillow Blocks with Spherical. 8 K F Pillow Blocks with Spherical. 8 K F Pillow Blocks with Spherical Rollers Rotary Rollers, Mathews Ball-bearing Conveyor. 484 Roper Corporation. Geo. D.: Rotary Pumps for Lubricating Systems. 228 Rose, Robert S., Personal of S21 Rousselle Safety Device for Punch Presses. 161 Ross Operating Valve Co.; Solenoid-controlled Air Valve. 683 Rotary File Co.: Hand- and Mill-cut Rotary Files. 232 Rotary Movement for Oyerating Shell Hopper. Pulsating. J. E. Fenno. 783 Rotary File Co.: Hand- and Mill-cut Rotary Files. 288 Rotary Movement for Oyerating Shell Hopper. Pulsating. J. E. Fenno. 783 Roto-Brouches for Circular Surfaces, Bullard. 288 Rotor Air Tool Co 188 Rotor Air Tool Co 188 Roter
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Office of the Prasts, George G. Personal of 69-68 Prasts, George G. Personal of 95 Pratt & Whitney Co.: New P & W Jig Boring Machine 67 New Machines Exhibited by Pratt & Whitney 67 Tilting Table for Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 95 Cambook Serrated-blade Reamers 157 Model C Lathe 161 High-speed Vertical Milling and Profiling Machines. 157 Model C Lathe 170 Pressolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 41 Press, Bliss Automatic High-speed 62 Press, Cleveland Four-noint Suspension 414 Press Clutches Electrically Controlled 'Air Operator' for Power 19 Press, Double Roll Feed and Scrap Cutter for Double-action 19 Press, Farrel-Birmingham Hydraulic Press for Assembling, Valve Guide Bushings in Cylinders, Oilcear "Pushemall" Press, Greenerd Hydraulic Forcing, Broaching, and Molding.	Control Safety Device for Lighting Gas Furnaces, Bristol Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel	Morton ings. Reasuring the Finish on Timken 168 Roller Bearings, S K F Pillow Blocks with Spherical. Spherical 168 Roller Bearings to Machine Tools, Typical Applications of. S. M. Weekstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D: Rotary Pumps for Lubricating Systems 228 Rose, Robert. S. Personal of 821 Ross Co., David J. Rousselle Safety Device for Punch Presses 161 Ross Operating Valve Co.; Solenoid-controlled Air Valve 683 Rotary File Co.; Hand- and Mill-cut Rotary Files 232 Rotary Movement for Operating Shell Hopper, Pulsating. J. E. Fenno 780 Rotoblast Cleaning Machine, Pangborn 93 Roto-Broaches for Circular Surfaces, Bullard 288 Rotor Air Tool Co., Electric and Air Tools 24 Pneumatic Drill Rousselle Safety Device for Punch Presses 161 Rubber and Wood Used for Dies in Forming Airplane Parts, Charles O. Herb Rubber and Wood Used for Dies in Forming Airplane Parts, Charles O. Herb Rubber Plays an Important Part in the New Automobiles Rubber and Wood Used For Dies in Forming Airplane Parts, Charles O. Herb Rubber Plays an Important Part in the New Automobiles Rubber Replaces Metal Springs in Water Pumps, Synthetic Rubber Used in Airplane Fuel Lines, Synthetic 168 Rubber Used in Airplane Fuel
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Orilling Machine, New Machines Exhibited by Pratt & Whitney, Tilting Table for Jig Boring Machine, New Machines Exhibited by Pratt & Whitney, Tilting Table for Jig Boring Machine, Die-sinking Cutters Designed for High-speed, Pressed Vertical Milling and Profiling Machines, Pressed Vertical Milling and Profiling Machines, Pressed Vertical Milling and Profiling Machines, Press, American Hydraulic Straightening, Press, Gleveland Four-noint Suspension Press, Cleveland Four-noint Suspension Press, Double Roll Feed and Scrap Cutter for Double-action, Double-action, Press, Farrel-Birmingham Hydraulic Press, Greenerd Hydraulic Plastic Molding Press Greenerd Hydraulic Forcing, Broaching, and Molding, Press, Parvel-Bernshing Valve Guide Bushings in Molding, Press, Greenerd Hydraulic Forcing, Broaching, and Molding, Press Hanna Pertable Procumentic	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer Radium as a Means of Inspection, J. F. Springer 402 Ransom Grinding Machine Co.: 289 Ransom Grinding Machine Co.: Power Sawing Machine Oster Rassumssen Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Lost Power Sawing Machine Co.: Power Saw	Morton ings. Reasuring the Finish on Timken 168 Roller Bearings, S K F Pillow Blocks with Spherical. Spherical 168 Roller Bearings to Machine Tools, Typical Applications of. S. M. Weekstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D: Rotary Pumps for Lubricating Systems 228 Rose, Robert. S. Personal of 821 Ross Co., David J. Rousselle Safety Device for Punch Presses 161 Ross Operating Valve Co.; Solenoid-controlled Air Valve 683 Rotary File Co.; Hand- and Mill-cut Rotary Files 232 Rotary Movement for Operating Shell Hopper, Pulsating. J. E. Fenno 780 Rotoblast Cleaning Machine, Pangborn 93 Roto-Broaches for Circular Surfaces, Bullard 288 Rotor Air Tool Co., Electric and Air Tools 24 Pneumatic Drill Rousselle Safety Device for Punch Presses 161 Rubber and Wood Used for Dies in Forming Airplane Parts, Charles O. Herb Rubber and Wood Used for Dies in Forming Airplane Parts, Charles O. Herb Rubber Plays an Important Part in the New Automobiles Rubber and Wood Used For Dies in Forming Airplane Parts, Charles O. Herb Rubber Plays an Important Part in the New Automobiles Rubber Replaces Metal Springs in Water Pumps, Synthetic Rubber Used in Airplane Fuel Lines, Synthetic 168 Rubber Used in Airplane Fuel
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Office of the Excell-O Hydraulic Office of the Excell-Office of the Excell-Of	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer Railing, Welded Tubular 8 & L. Tools: Turning Tool 288 Ransom Grinding Machine Co.: 814 "Raviduction" Pipe Threading and Bucking-up Machine. 0ster 1814 Rasinessen Machine Co.: Power Sawing Machine Combination Roller Clutch and J. E. Fenno Ray-Blade Face Millian Cutters, Ingersoll 755 Read. William C., Obituary of Ready Tool Co.: Work-driving Dog for Cylindrical Grinders 162 "Realwear" Welding Cable Designed for Wear Researces.	Morton ings, Rabierators 709 Morton Granings, Measuring the Finish on Timken Roller Bearings, SKF Pillow Blocks with 346 Spherical 346 Spherical 774 Roller Bearings to Machine Tools, Typical Applications of S, M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D: Rotary Pumps for Lubricating Systems 228 Rose, Robert S., Personal of 821 Rose Co., David J
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Orilling Machine, New Machines Exhibited by Pratt & Whitney, Tilting Table for Jig Boring Machine, New Machines Exhibited by Pratt & Whitney, Tilting Table for Jig Boring Machine, Die-sinking Cutters Designed for High-speed, Camlock Serrated-blade Reamers Model C Lathe Cambook Serrated-blade Reamers Model C Lathe Pressed Vertical Milling and Profiling Machines. Pressolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension Press, Cleveland Four-noint Suspension Press, Cleveland Four-noint Suspension Press, Cleveland Four-noint Suspension Press, Defiance Hydraulic Plastic Molding 682 Press, Double Roll Feed and Scrap Cutter for Double-action Press, Defiance Hydraulic Plastic Molding 682 Press, Farrel-Birmingham Hydraulic Press for Assembling Valve Guide Bushings in Cylinders. Oilcear "Pushemall" Press for Test Pieces, Trimming and Upsetting 89 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 19 Press, Niagara "Master Series" 416 Press, Niagara "Master Series" 417 Press, Oilcear St.ton Two column 100 Press of Improved Design, Niagara Inclinable 22 Press of Improved Design Niagara Inclinable 22 Press of Improved Design Niagara Inclinable 22	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 828 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co.: High-speed Grinding Machine Co.: High-speed Grinding Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Axial Movement to Feed-servew. Differential. F. E. Judson 156 Ratchet for Imparting Slow Axial Movement Combination Roller Clutch and J. E. Fenno 175 Ray-Blade Face Milling Cutters, Ingersoll 756 Read William C., Obituary of 294 Realwear" Welding Cable Designed for Wear Reslavear" Welding Cable Designed for Wear Reslavear 8164 Reslavear 8164 Reslavear 866 Reslavear 86	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Office of the Extention of	Control Safety Device for Lighting Gas Furnaces, Bristol 9 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection J. F. Springer 402 Railing Welded Tubular 8 & L. Tools: Turning Tool 288 Ransom Grinding Machine Co.: 181 Ransom Grinding Machine Co.: 182 Ransussen Machine Co.: 183 Ransussen Machine Co.: 184 Ransom Grinding Machine Co.: 185 Ransom Grinding Machine Co.: 186 Ratchet for Imparting Slow Axial Movement to Feed-serew, Differential. F. E. Judson 116 Ratchet for Imparting Variable Rotary Movement Combination Roller Clutch and J. E. Fenno 187 Ray-Blade Face Milliam C. Obituary of Ready Tool Co.: Work-driving Dog for Cylindrical Grinders 162 Readward Welding Cable Designed for Wear Readvance Researce Motor Shaft Bushings, Expansion 816 Reamers, Cogsdill Inserted-blade Adjustable 691 Reamers, Ingersoll Zee-Lock Core Drills and 232 B 815	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Orilling Machine, Pragst, George G., Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed 92 Camlock Serrated-blade Reamers Model C Lathe Cambook Serrated-blade Reamers High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension 462 Press, Cleveland Four-noint Suspension 682 Press, Double Roll Feed and Scrap Cutter for Double-action Double-action Press, Defance Hydraulic Plastic Molding 682 Press, Farrel-Birmingham Hydraulic Press, Greenerd Hydraulic Press, Greenerd Hydraulic Press, Greenerd Hydraulic Press, Greenerd Hydraulic Press, Niagara "Master Series" 417 Press, Niagara "Master Series" 417 Press, Niagara "Master Series" 417 Press, Oilgear 300-ton Vertical 77 Press, Golgear 300-ton Vertical 77 Press, Rockford Improved Inclinable 28 Press, Rockford Improved Incli	Control. Safety Device for Lighting Gas Furnaces, Bristol. 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel . 291 R Racine Tool & Machine Co.: "Oil-Out" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing, Welded Tubular . 384 R. & L. Tools: Turning Tool	Morton ings, Rabierators of 709 Morton ings, Rabierators of 709 Roller Bearings, Measuring the Finish on Timken 168 Roller Bearings, SKF Pillow Blocks with 346 Spherical
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Orilling Machine, Pragst, George G., Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney Tilting Table for Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 92 Camlock Serrated-blade Reamers 157 Model C Lathe 277 Model C Lathe 277 Model C Lathe 277 High-speed Vertical Milling and Profiling Machines. Pressolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 405 Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension 462 Press, Cleveland Four-noint Suspension 622 Press, Double Roll Feed and Scrap Cutter for Double-action 97 Press, Defiance Hydraulic Plastic Molding 682 Press, Double Roll Feed and Scrap Cutter for Double-action 97 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 97 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 97 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 97 Press, Oilgear 35-ton Two-column 97 Press, Oilgear 35-ton Two-column 97 Press, Golgear 35-ton Two-column 97 Press, Oilgear 300-ton Vertical 77 Press, Toledo Straight-column 97 Press, Toledo Straight-column 97 Press, Toledo Straight-column 455 Press, Toledo Straight-column 455	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Gil-Cut" Metal-cutting Machine for Stampings 278 Radiator Tubes, Kane & Roach Machines for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool Machine Co.: 289 Ransom Grinding Machine Co.: 814 "Raniduction" Pipe Threading and Bucking-up Machine, Oster Co.: 164 Raniduction Pipe Threading and Bucking-up Machine, Oster Co.: 746 Rasmussen Machine Co.: 746 Rasmussen Machine Co.: 150 Ratchet for Imparting Slow Axial Movement to Feet-serve, Differential. F. E. Judson 150 Ratchet for Imparting Slow Axial Movement to Combination Roller Clutch and J. E. Fenno 1755 Read. William C., Obituary of 294 Ready Tool Co. Obituary of 294 Ready Tool Co. Obituary of 294 Readwar Welding Cable Designed for Wear Reskatace Welding Cable Designed for Wear Reskatace Served Differential Reamers, Cogstill Inserted-blade Adjustable 691 Reamers, Ligersoll Zee-Lock Core Drills and 232-18 Reamers, Kelly Serrated Inserted-blade 815 Reamers, Kelly Serrated Inserted-blade 815 Reamers, Reiger Drilling and Facing Machine.	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696. Ex-Cell-O Hydraulic Of 696. Pragst, George G., Personal of 95 Pragst, George G., Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney 60. New Machines Exhibited by Pratt & Whitney 60. Tilting Table for Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 91 Cambook Serrated-blade Reamers Model C Lathe High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 416 Press, Gleveland Four-noint Suspension 416 Press, Cleveland Four-noint Suspension 416 Press, Cleveland Four-noint Suspension 416 Press, Denble Roll Feed and Scrap Cutter for Double-action 416 Press, Deflance Hydraulic Plastic Molding 682 Press, Farrel-Birmingham Hydraulic 682 Press, Farrel-Birmingham Hydraulic 817 Press for Assembling Valve Guide Bushings in Cylinders. Oilecar "Pushemall" 817 Press, Greenerd Hydraulic Press, Broaching, and Molding 1968 Press, Greenerd Hydraulic Press, Miagara "Master Series" 417 Press, Oilecar 35-ton Two-column 682 Press, Toledo Straight-column 79 Press, To	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool 288 Ransom Grinding Machine Co.: High-speed Grinding Machine and Bucking-up Machine, Oster 288 Ransussen Machine Co.: Power Sawing Machine Co.: Power Sawing Machine Axial Movement to Feed-screw, Differential. F. E. Judson 116 Ratchet for Imparting Slow Axial Movement Combination Roller Clutch and. J. E. Fenno. Ray-Blade Face Milling Cutters, Ingersoll 755 Read William C., Obituary of 294 Ready Tool Co.: Work-driving Dog for Cylindrical Grinders 164 Reamers, Cogsdill Inserted-blade Adjustable 691 Reamers, Ingersoll Zee-Lock Core Drills and 232-B Reamers, Relys Serated Inserted-blade 611 Reaming, Boring, Drilling, and Facing Machine. Natco High-production 1849 Reming, Drilling, and Boring Machines for Producing One Hundred Different Parts, Hydram 794	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Office (1988) Executed the Prayst George G. Personal of 696. Prayst, George G. Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney 60. New Machines Exhibited by Pratt & Whitney 60. Tilting Table for Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers Model C Lathe High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 416 Press, Rake, Boom All-welded 92 Press, Cleveland Four-noint Suspension 94 Press, Cleveland Four-noint Suspension 94 Press, Defiance Hydraulic Plastic Molding 63 Press, Double Roll Feed and Scrap Cutter for Double-action 94 Press, Defiance Hydraulic Plastic Molding 64 Press, Farrel-Birmingham Hydraulic 94 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 79 Press, Greenerd Hydraulic Press, Miagara "Master Series" 47 Press, Niagara "Master Series" 47 Press, Niagara Small-size "Master Series" 47 Press, Oileear 35-ton Two-column 69 Press, Toledo Straight-column 79	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co. "Oil-Cut" Metal-cutting Machine	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696-B Pragst, George G. Personal of 95 Pragst, George G. Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed 95 Camlock Serrated-blade Reamers Model C Lathe Cambook Serrated-blade Reamers High-speed Vertical Milling and Profiling Machines. Pressolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension 22 Press, Cleveland Four-noint Suspension 682 Press, Double Roll Feed and Scrap Cutter for Double-action Press, Cleveland Four-noint Suspension 683 Press, Double Roll Feed and Scrap Cutter for Double-action 70 Press, Greenerd Hydraulic Plastic Molding 683 Press, Farrel-Birmingham Hydraulic 81 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 71 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 72 Press, Oilgear 35-ton Two-column 72 Press, Oilgear 35-ton Two-column 72 Press, Oilgear 35-ton Two-column 72 Press, Oilgear 300-ton Vertical 72 Press, Golgear 300-ton Vertical 74 Press, Rockford Improved Inclinable 72 Press, Toledo Straight-column 74 Press, Toledo Straight-column 74 Press, Safety Block Clutch for Large. William C. Press, Ballway Tricks and Increases Capacity. 40 Presses, Baldwin-Southwark "Hyspeed" and General Williy.	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co. "Oil-Cut" Metal-cutting Machine for Producing 811 Radium as a Means of Inspection J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co. High-speed Grinding Machine 814 Raniduction" Pipe Threading and Bucking-up Machine, Oster 746 Rasmussen Machine Co. Power Sawing Machine Co. Power Sawing Machine Stamping Machine 150 Ratchet for Imparting Slow Axial Movement to Feed-screw, Differential F. E. Judson 116 Ratchet for Imparting Variable Rotary Movement Combination Roller Clutch and J. E. Fenno Ray-Blade Face Milling Cutters, Ingersoll 755 Read William C., Obituary of 294 Readwer Welding Cable Designed for Wear Reskstane 164 Reamers, Cogstill Inserted-blade Adjustable 691 Reamers, Cogstill Inserted-blade Machine 815 Reamers, Rely Serrated Inserted-blade 691 Reamers, Rely Serrated Inserted-blade 691 Reamers, Rely Serrated Inserted-blade 691 Reaming, Drilling, and Boring Machines for Producing One Hundred Different Parts, Hydram 794 Reaming, Drilling, and Counterboring Machine, 849 Reaming, Drilling, and Counterboring Machine, 680 Raming, Drilling, Milling, Countersinking, and 7550	Mortonings, Measuring the Finish on Timken Roller Bearings, SKF Pillow Blocks with 346 Roller Bearings to Machine Tools, Typical Applications of. S. M. Weckstein 774 Rollers, Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems 228 Rose, Robert. S. Personal of 821 Rose Co., David J. Rousselle Safety Device for Punch Presses 161 Ross Operating Valve Co.: Solenoid-controlled Air Valve 683 Rotary File Co.: Hand- and Mill-cut Rotary Files 232 Rotary Movement for Operating Shell Hopper, Pulsating. J. E. Fenno 783 Rotary File Co.: Electric and Air Tools 757 Rousselle Safety Device for Punch Presses 161 Rubber and Wood Used for Dies in Forming Airplane Parts. Charles O. Herb Romanis Deli Rubber and Wood Used for Dies in Forming Airplane Parts. Charles O. Herb Romanis Deli Rubber and Wood Used for Dies in Forming Airplane Parts. Charles O. Herb Romanis Deli Rubber Leving Machine Frotected by 675 Rubber Plays an Important Part in the New 337 Rubber Replaces Metal Springs in Water Pumps. Synthetic 688 Rustproofing Develonment, A New Rustproofing Process Installed by Buick Motor Co. 126 Rustproofing Process Installed by Buick Motor Co. 126 Rustproofing Process Installed by Buick Motor Co. 26 Rustproofing Process Installed by Buick Motor Co. 126 Rustproofing Process Installed by Buick Motor Co. Gusher Machiner Tool Coolant Pump 628 Rustproofing Process Installed by Buick Motor Co. Gusher Machiner Tool Coolant Pump 628 Rustproofing Process Installed by Buick Motor Co. Gusher Machiner Tool Coolant Pump 628 Rustproofing Process Installed by Buick Motor Co. Gusher Machine Tool Coolant Pump 628 Rustproofing Process Installed by Buick Motor Co. Gusher Machine Tool Coolant Pump 628 Rustproofing Process Installed by Buick Motor Co. Sofety Device for Lighting Gas Furnaces, Bristol
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696-B Pragst, George G. Personal of 95 Pragst, George G. Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed 95 Camlock Serrated-blade Reamers Model C Lathe Cambook Serrated-blade Reamers High-speed Vertical Milling and Profiling Machines. Pressolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension 22 Press, Cleveland Four-noint Suspension 682 Press, Double Roll Feed and Scrap Cutter for Double-action Press, Cleveland Four-noint Suspension 683 Press, Double Roll Feed and Scrap Cutter for Double-action 70 Press, Greenerd Hydraulic Plastic Molding 683 Press, Farrel-Birmingham Hydraulic 81 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 71 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 72 Press, Oilgear 35-ton Two-column 72 Press, Oilgear 35-ton Two-column 72 Press, Oilgear 35-ton Two-column 72 Press, Oilgear 300-ton Vertical 72 Press, Golgear 300-ton Vertical 74 Press, Rockford Improved Inclinable 72 Press, Toledo Straight-column 74 Press, Toledo Straight-column 74 Press, Safety Block Clutch for Large. William C. Press, Ballway Tricks and Increases Capacity. 40 Presses, Baldwin-Southwark "Hyspeed" and General Williy.	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co. "Oil-Cut" Metal-cutting Machine for Producing 811 Radium as a Means of Inspection J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co. High-speed Grinding Machine 814 Raniduction" Pipe Threading and Bucking-up Machine, Oster 746 Rasmussen Machine Co. Power Sawing Machine Co. Power Sawing Machine Stamping Machine 150 Ratchet for Imparting Slow Axial Movement to Feed-screw, Differential F. E. Judson 116 Ratchet for Imparting Variable Rotary Movement Combination Roller Clutch and J. E. Fenno Ray-Blade Face Milling Cutters, Ingersoll 755 Read William C., Obituary of 294 Readwer Welding Cable Designed for Wear Reskstane 164 Reamers, Cogstill Inserted-blade Adjustable 691 Reamers, Cogstill Inserted-blade Machine 815 Reamers, Rely Serrated Inserted-blade 691 Reamers, Rely Serrated Inserted-blade 691 Reamers, Rely Serrated Inserted-blade 691 Reaming, Drilling, and Boring Machines for Producing One Hundred Different Parts, Hydram 794 Reaming, Drilling, and Counterboring Machine, 849 Reaming, Drilling, and Counterboring Machine, 680 Raming, Drilling, Milling, Countersinking, and 7550	Mortonings, Measuring the Finish on Timken 168 Roller Bearings, SKF Pillow Blocks with Spherical. Spherical. Spherical. Soller Bearings to Machine Tools, Typical Applications of, S. M. Weekstein. Rollers Mathews Ball-bearing Conveyor. 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems. 228 Rose, Robert. S., Personal of St. Rotary Pumps for Lubricating Systems. Rotary Pumps for Lubricating Systems. 228 Rose, Robert. S., Personal of St. Rotary Pumps for Systems. 821 Ross Co., David J Rousselle Safety Device for Punch Presses. 161 Ross Operating Valve Co.: Solenoid-controlled Air Valve. 838 Rotary File Co.: Hand- and Mill-cut Rotary Files. 848 Rotary File Co.: Hand- and Mill-cut Rotary Files. 849 Rotary Movement for Operating Shell Hopper, Pulsating. J. E. Fenno. 740 Rotoblast' Cleaning Machine, Pangborn. 941 Roto-Broaches for Circular Surfaces, Bullard. 242 Pneumatic Drill 745 Rousselle Safety Device for Punch Presses. 845 Rubber Bay Device for Punch Presses. 846 Rubber and Wood Used for Dies in Forming Airplane Parts. Charles O. Herb. 847 Rubber Replaces Metal Springs in Water Pumps. 848 Synthetic. 849 Ruber Plays an Important Part in the New Automobiles. 840 Ruber Used in Airplane Fuel Lines, Synthetic. 840 Ruber Used in Airplane Fuel Lines, Synthetic. 841 Rubber Used in Airplane Fuel Lines, Synthetic. 842 Ruber Bad Protractor, Combination Steel. 843 Rustresiting Steel Caliper. 844 Rustroofing Process Installed by Buick Motor Co. 166 Rustproofing Process Installed by Buick Motor Co. 166 Rustproofing Process Installed by Buick Motor Co. 166 Rustproofing Process Installed by Buick Motor Co. 167 Rustproofing Process Installed by Buick Motor Co. 168 Rustproofing Process Installed by Buick Motor Co
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Orilling Machine, Pragst, George G., Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney, Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed 92 Camlook Serrated-blade Reamers Model C Lathe Die-sinking Cutters Designed for High-speed 92 Camlook Serrated-blade Reamers Model C Lathe Press, American Hydraulic Straightening 416 Press, American Hydraulic Straightening 416 Press, Bliss Automatic High-speed 22 Press, Bliss Automatic High-speed 62 Press, Cleveland Four-noint Suspension Press, Cleveland Four-noint Suspension Press, Clutches, Electrically Controlled "Air Operator" for Power Press, Defiance Hydraulic Plastic Molding 685 Press, Double Roll Feed and Scrap Cutter for Double-action Double-action Press, Farrel-Birmingham Hydraulic Press, Farrel-Birmingham Hydraulic Press, Greenerd Hydraulic Forcing, Broaching, and Molding Press, Orenerd Hydraulic Forcing, Broaching, and Molding Press, Orenerd Hydraulic Forcing, Broaching, and Molding Press, Niagara "Master Series" 417 Press, Oilgear 35-ton Two-column Press, Oilgear 300-ton Vertical 92 Press, Roley Block Clutch for Large, William C Betz Press, Toledo Straight-column Press, Toledo Straight-column Press, Toledo Straight-column Press, Selty Block Clutch for Large, William C Relivant Trucks and Increases Capacity Press, Ballwan Trucks and Increases Capacity Presses, Bliss Automatic High-production 61 Presses, H.PM Hydro-Power Presses, Ruisselle Safety Device for Punch 166 Presses, Ruisselle Safety Device for Punch 167 Presses, Wright Hydro-Power Presses, Wright Hydro-Power Presses, Wright Hydro-Power Presses, Wright Hydro-Power Pres	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co.: 814 "Raniduction" Pipe Threading and Bucking-up Machine. 0ster Rasmussen Machine Co.: Power Sawing Machine Combination Roller Clutch and. J. E. Fenno Ray-Blade Face Milliam Cutters, Ingersoll 755 Read. William C., Obituary of 294 Ready Tool Co.: Work-driving Dog for Cylindrical Grinders 164 "Realwear" Welding Cable Designed for Wear Restance Cogstill Inserted-blade Adjustable 691 Reamers, Cogstill Inserted-blade Adjustable 691 Reamers, Rely Serrated Inserted-blade 815 Reamers, Kelly Serrated Inserted-blade 815 Reamers, Kelly Serrated Inserted-blade 815 Reamers, Kelly Serrated Inserted-blade 815 Reamers, Reproduction 815 Reamers, Pratt & Whitney Camlock Serrated 157 Reaming, Boring, Drilling, and Facing Machine. 749 Reaming, Drilling, and Boring Machines for Producing Machine, Crankshaft 845 Reamers Drilling, and Countersinking, and Tapping Machine of Smaller Size, Hydram Drilling, Boring, and Countersinking, and Reaming, Drilling, and Countersinking, and Reaming, Boring, and Countersinking, and Reaming, Boring, and Countersoning Machine. 850	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696 Pragst, George G., Personal of 696 Pragst, George G., Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney Tilting Table for Jig Boring Machine Die-sinking Cutters Designed for High-speed 92 Camlock Serrated-blade Reamers Model C Lathe Die-sinking Cutters Designed for High-speed 92 Camlock Serrated-blade Reamers Model C Lathe High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension Press, Cleveland Four-noint Suspension Press, Cluthes. Electrically Controlled "Air Operator" for Power Press, Double Roll Feed and Scrap Cutter for Double-action Double-action Double-action Dress, Greenerd Hydraulic Plastic Molding 685 Press, Farrel-Birmingham Hydraulic Press, Greenerd Hydraulic Press, Greenerd Hydraulic Forcing, Broaching, and Molding. Press, Greenerd Hydraulic Forcing, Broaching, and Molding. Press, Niagara "Master Series" 417 Press, Oligear 35-ton Two-column 62 Press, Oligear 35-ton Two-column 62 Press, Gleera 30-ton Vertical 73 Press, Toledo Straight-column Press, Toledo Straight-column Press, Rolled Straight-column Presses, Roll	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co.: 814 "Raviduction" Pipe Threading and Bucking-up Machine. 0ster Rasmussen Machine Co.: Power Sawing Machine Co. Power Sawing Machine Co. Ratchet for Imparting Slow Axial Movement to Feed-serew. Differential. F. E. Judson 116 Ratchet for Imparting Variable Rotary Movement. Combination Roller Clutch and. J. E. Fenno. Ray-Blade Face Milliang Cutters, Ingersoll 755 Read. William C., Obituary of Realy Tool Co.: Work-driving Dog for Cylindrical Grinders 164 Reamer for Motor Shalt Bushings, Expansion. 816 Reamers Cogsdill Inserted-blade Adjustable 691 Reamers, Ingersoll Zee-Lock Core Drills and 232-B. Reamers, Kelly Serrated Inserted-blade 691 Reamers, Ingersoll Zee-Lock Core Drills and 232-B. Reamers, Kelly Serrated Inserted-blade 691 Reamers, Ingersoll Zee-Lock Core Drills and 232-B. Reamers, Fratt & Whitney Camlock Serrated-blade 815 Reamers, Pratt & Whitney Camlock Serrated-blade 815 Reamers, Drilling, and Boring Machines for Producing One Hundred Different Parts, Hydram 794 Reaming, Drilling, and Countersboring Machine. 840 Reaming, Drilling, and Countersboring Machine. 860 Reaming, Drilling, Milling, Countersboring Machine. 860 Reaming, Drilling, and Countersboring Machine. 860 Rea	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 64-6 Powers, Frank B., Personal of 69-6 Pragst, George G., Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney 7 New Machines Exhibited by Pratt & Whitney 7 Pratt & Whitney Co. New P & W Jig Boring Machine 86 Die-sinking Cutters Designed for High-speed 92 Cambock Serrated-blade Reamers 157 Model C Lathe 157 Model C Lathe 158 High-speed Vertical Milling and Profiling Machines. Prescolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 405 Press, American Hydraulic Straightening 416 Press, Rake, Boom All-welded 224 Press Bliss Automatic High-speed 244 Press Bliss Automatic High-speed 622 Press, Cleveland Four-noint Suspension 622 Press, Cleveland Four-noint Suspension 632 Press, Double Roll Feed and Scrap Cutter for Double-action 7 Double-action 9 Press, Officer "Pushemall" 815 Press, Greenerd Hydraulic Plastic Molding 685 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 9 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 9 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 9 Press, Oilgear "Myshemall" 166 Press, Greenerd Hydraulic Forcing, Broaching, and 9 Press, Oilgear 35-ton Two-column 9 Press, Oilgear 35-ton Two-column 9 Press, Oilgear 35-ton Two-column 9 Press, Golfer 35-ton Two-column 9 Press, Golfer 35-ton Two-column 9 Press, Toledo Straight-column 9 Press, Toledo Straight-column 9 Press, Safety Block Clutch for Large, William C Press, Roykford Improved Inclinable 229 Press, Oilgear 300-ton Vertical 73 Press, Roykford Improved Inclinable 229 Press, Toledo Straight-column 9 Press, Roykford Improved Inclinable 61 Press, Roykford Improved Inclinable 62 Press, Rehalm Noorthank "Hyspeed" and General Utility 9 Presses, Bliss Automatic High-production 61 Presses, Relamin-Southwark "Hyspeed" and General Utility 9 Presses, Rulawin-Southwark "Hyspeed"	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Stampings 278 Radiator Tubes, Kane & Roach Machines for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing, Welded Tubular 384 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co.: 814 Raniduction" Pipe Threading and Bucking-up Machine, Oster 746 Rasmussen Machine Co.: Power Sawing Machine Co.: Power Sawing Machine L. F. E. Judson 116 Ratchet for Imparting Slow Axial Movement to Feet-serve. Differential. F. E. Judson 116 Ratchet for Imparting Variable Rotary Movement, Combination Roller Clutch and J. E. Fenno 1755 Read. William C., Obituary of 294 Ready Tool Co. Obituary of 294 Reamers, Tool Co. Obituary of 294 Reamers Cogsdill Inserted-blade Adjustable 694 Reamers Cogsdill Inserted-blade Adjustable 694 Reamers, Kelly Servated Inserted-blade 815 Reamers, Refly Servated Inserted-blade 815 Reamers, Refly Servated Inserted-blade 815 Reamers, Kelly Servated Inserted-blade 815 Reamers, Refly Servated Inserted-blade 815 Reaming Drilling and Counterboring Machine 815 Reaming Mechine Cr	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 66-69-68 Ex-Cell-O Hydraulic Of 95-69-69-69-69-69-69-69-69-69-69-69-69-69-	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Brisken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool 289 Ransom Grinding Machine Co.: 481 Ransom Grinding Machine Co.: 481 Raniduction" Pipe Threading and Bucking-up Machine, Oster 284 Ransussen Machine Co.: 484 Rasinessen Machine Co.: 484 Readwar' Welding Cable Designed for Wear Restance Restanc	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydroseru" Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696 Pragst, George G. Personal of 95 Pragst, George G. Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine New Machines Exhibited by Pratt & Whitney 71 Pressed Cambook Serated-blade Reamers 95 Model C Lathe 100 Die-sinking Cutters Designed for High-speed 92 Cambook Serrated-blade Reamers 157 Model C Lathe 100 Presscolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 405 Press, American Hydraulic Straightening 416 Press, American Hydraulic Straightening 416 Press Bliss Automatic High-speed 92 Press Rake, Boom All-welded 93 Press, Cleveland Four-noint Suspension 94 Press, Cleveland Four-noint Suspension 94 Press, Double Roll Feed and Scrap Cutter for Double-action 97 Press, Defance Hydraulic Plastic Molding 98 Press, Double Roll Feed and Scrap Cutter for Double-action 97 Press, Olicear "Pushemall" 98 Press, Greenerd Hydraulic Forcing, Broaching, and Molding 97 Press, Greenerd Hydraulic Forcing, Broaching, and 97 Press, Olicear "Mydraulic Forcing, Broaching, and Molding 97 Press, Olicear "Mydraulic Forcing, Broaching, and 97 Press, Olicear 300-ton Vertical 73 Press, Olicear 35-ton Two-column 97 Press, Olicear 300-ton Vertical 73 Press, Gordenerd Hydraulic Forcing, Broaching, and 97 Press, Olicear 300-ton Vertical 73 Press, Rockford Improved Inclinable 22 Press, Colleger 35-ton Two-column 97 Press, Safety Block Clutch for Large, William C 97 Press, Colleger 35-ton Two-column 97 Press, Safety Block Clutch for Large, William C 97 Press, Rockford Improved Inclinable 97 Pres	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Stampings 278 Radiator Tubes, Kane & Roach Machines for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing, Welded Tubular 884 R & L. Tools: Turning Tool Machine Co.: High-speed Grinding Machine	Morton. Mor
The Patent Lawer as a Business Advisor. 799 Power Unit, Buhr Two-way Drilling Machine and "Hydrosern" 64-6 Power Units and Hydraulic Drilling Machine, Ex-Cell-O Hydraulic Of 696-8 Pragst, George G. Personal of 95 Pragst, George G. Personal of 95 Pratt & Whitney Co. New P & W Jig Boring Machine 86 New Machines Exhibited by Pratt & Whitney 67 Pratt & Whitney Co. New P & W Jig Boring Machine 86 Pressinking Cutters Designed for High-speed 95 Pratt & Whitney Co. High-speed Vertical Milling and Profiling Machines 96 Pressolov—a New Alloy that Cuts Weight of Railway Trucks and Increases Capacity 40 Press, American Hydraulic Straightening 416 Press, Cleveland Four-noint Suspension 416 Press, Cleveland Four-noint Suspension 96 Press, Cleveland Four-noint Suspension 97 Press, Defiance Hydraulic Plastic Molding 68 Press, Double Roll Feed and Scrap Cutter for Double-action 97 Press, Defiance Hydraulic Plastic Molding 68 Press, Farrel-Birmingham Hydraulic 97 Press, Greenerd Hydraulic 97 Press, Oilgear 300-ton Vertical 97 Press, Oilgear 300-ton Vertical 97 Press, Toledo Straight-column 62 Press, Toledo Straight-column 72 Press, Toledo Straight-column 72 Press, Roykford Improved Inclinable 97 Press, Roykford 10 Presses, Bliss Automatic High-production 97 Presses, Bliss Automatic High-production 97 Presses, Roykford 97 Presses, Roykford 97 Presses, Roykford 97 Presses, Roykford 97 Presse	Control Safety Device for Lighting Gas Furnaces, Bristol 812 Q Quaker Chemical Products Corporation: Polymerized Wax Sulphur-base Cutting Oil. 818 Quickwork Co.: Trimming and Beading Machine for Stampings 278 Broken Cast-iron Frame Replaced by Frame of Welded Steel 291 R Racine Tool & Machine Co.: "Oil-Cut" Metal-cutting Machine for Producing. 811 Radium as a Means of Inspection. J. F. Springer 402 Railing Welded Tubular 384 R & L. Tools: Turning Tool Machine Co.: High-speed Grinding Machine Co.: High-speed Grinding Machine Co.: Power Sawing Machine Co.: P	Morton. Morton. Morton. Morton. Morton. Morton. Morton. Moller Bearings, Measuring the Finish on Timken 168 Roller Bearings, S K F Pillow Blocks with Spherical. Moller Bearings to Machine Tools, Typical Applications of. S. M. Weekstein Property of the Mollers Mathews Ball-bearing Conveyor 484 Roper Corporation, Geo. D.: Rotary Pumps for Lubricating Systems 228 Rose, Robert. S., Personal of 821 Rose Co., David J.: Rose Co., David J.: Rose Go., David J.: Rose Go., David J.: Rose Go., Parid J.: Rose Go., Parid J.: Rose Go., Personal of Punch Presses 161 Rose Operating Valve Co.: Solenoid-controlled Air Valve 683 Rotary File Co.: Hand- and Mill-cut Rotary Files 683 Rotary File Co.: Hand- and Mill-cut Rotary Files 683 Rotary File Co.: Hand- and Mill-cut Rotary Files 683 Rotary File Co.: Rotary Movement for Operating Shell Hopper, Pulsating. J. E. Fenno 783 Roton-Broaches for Circular Surfaces, Bullard 288 Rotor Air Tool Co Electric and Air Tools 24 Pneumatic Drill Rousselle Safety Device for Punch Presses 161 Rubber and Wood Used for Dies in Forming Airplane Parts, Charles O. Herb Rober Plays an Important Part in the New Automobiles 837 Rubber Replaces Metal Springs in Water Pumps, Synthetic 188 Rubber Used in Airplane Fuel Lines, Synthetic 188 Ruber Replaces Metal Springs in Water Pumps, Synthetic 188 Ruber Ba & Stainless Steel Caliper 289 Runkle, Karl H. Personal of 568 Rustproofing Process Installed by Buick Motor Co. 126 Rustproo

	Simplex Precision Boring Machine of Unit Type. 348	Staples, C. F.:	
194	Simplimatic Lathes Machine Forty-four Plymouth	Precision Boring in a Drill Press	154
Sargent, Willis H.: Emergency Dividing Engine for Graduating	Flywheels an Hour	Lathes and	51
Saw Rand see Rand	Sjogren Mfg. Co.;	Starrett Co., L. S.: Molybdenum Steel Hacksaw Blades	$\begin{smallmatrix} 614\\163\end{smallmatrix}$
Saw with Replaceable Blade, Atkins Hole 201	Speed Chuck	Starter Provides Protection Against Overloads,	95
Sawing, Filing, and Polishing Machine with Deep Throat, Band-Sawing Machine of Band Type, Combination	Crip lock Ball Bearing 758	Small Motor Steel, see Sheet, Stainless, High-speed, Alloy,	99
Filing and	Skilled Workers, Industry Reports a Shortage of, 114 Skilsaw, Inc.:	Nickel, etc. Steel Casting Rush Orders Should be Discouraged. Raymond L. Collier	
Filing and 223 Sawing Machine, Peerless High-duty Metal 54 Sawing Machine, Racine "Oil-Cut" Metal 228 Sawing Machine, Rasmussen Power 150	Electric Drills 16:1 Richinner, Robert B., Personal of 42:3 Skinner, Sherrod E., Personal of 35:7	Raymond L. Collier	671
Scale, Recording Weights at Long Distances from	Skinner, Sherrod E., Personal of	Oxidation, New	$674 \\ 695$
Scale with Photo-electric Cut-off Device, Toledo, 18	Slate. Tools for Drilling	Steel for Cold-header Dies, New	135
Scann-American Sales Service: "Contrasit" Belt Pulley Bandage	Microscope 291 Slotting Screw-heads, Fixture for, Phil. E. Veraa 665 Slushing Compound Resists High Humidity, New 376	"Stabilized"	736
Scannell, Charles T., Personal of	Slushing Compound Resists High Humidity, New 376 Smit & Sons, Inc., J. K.: "Sta-Kool" Holder for Truing Diamonds 288		803
Making Black-line Reproductions of Blueprints 328 Saving Power in Machine Shop with Two-motor	"Sta-Kool" Holder for Truing Diamonds 288 Smith & Serrell:	Cylinders of Alloy	404
Drive	Smith & Serrell 93 "Flexpin" Couplings 93 Smith, Fred B. Obituary of 168-0 Smith, Harry T. Personal of 823 Smith, Inc., Winfield H.: 630	Steel in Today's Automobiles, One Hundred Kinds of	540
in Manufacturing 594 Lubricating High-temperature Bearings 665	Smith, Harry T., Personal of 823	Steel in Two Minutes, From White Hot Slab to a	766
Air-conditioning Sman Shop Buildings in	Planetary Speed Reducers	Strip of Sheet Steel of High Tensile Strength, "Hi-Steel"—a Recent Low-slloy	404
Summer	Smith, Inc., Winfield H.: 630 Planetary Speed Reducers 630 Smith, Matthew A., Personal of 95 Smith, Miles C., Personal of 168-A Smith, M. W., Personal of 760-B Smith, Norbert E., Personal of 632-A Smith, Sydney A. Obituary of 760-D Smith, Wallace W., Personal of 821 "Smoothare" Welding Electrodes 751	Recent Low-alloy Recent Low-alloy High Tensile Strength. Steel Suitable for Heavy-duty Service. New	606
Punch Press with Indexing Turret 217 Scherr Co., Inc., George:	Smith, Norbert E., Personal of	N'ileboardo	336
Reinecker Heavy-duty Spline and Pinion Hob- bing Machines	Smith, Wallace W., Personal of	Steel Tubing to the Pound, 3200 Feet of Steel with Aluminum, New Process of Coating.	584
Combination Steel Rule and Protractor 760 Measuring to Millionths Made Easy by the Use	Snader, Ira J.:	C. A. Lileanoim	666 369
Measuring to Millionths Made Easy by the Use of the Ultra-Optimeter	Precision Thread Grinding as a Manufacturing Process. 528 Snodgrass, George M., Personal of 760-B	Stellite Employed for Other Purposes than Cutting	900
Schools Should Not Educate Specialists, Engineer-	Soldering and Brazing Acetylena Cenerator for 154	Tools Metal Finish Unmarred by Drawing	802
Schrader's Son, A. Division of Scovill Mfg. Co.: Quick-acting Couplers for Air Lines	Soldering Baths Improve Product and Cut Fuel Cost in Half, Electric 780 Soldering Irons from Overheating, Preventing.	Operations	468
Schultz The Casting Co.:	Soldering Irons from Overheating, Preventing.	Speed-Trol Motors	759
Extremely Thin Sections in Die-castings	Thomas Trail 665 South Bend Lathe Works: 488	Improved "Speed-Bloc" Sander	564
Scott, Charles F., Personal of	9-inch Lathe	Steuer, William: Metal-faced Rubber Stripper for Piercing Punch	326
Screwdriver with Magazine Feed, Power	"Workshop" Lathe with V-belt Drive 421 Underneath Drive for "Workshop" Lathe 562 Soviet Purchases in the United States 449	Shear-proof Blanking Die Stewart. Lewis N.:	
Screw-driving Machine, Bodine Automatic Screw- inserting and	Soviet Russia, Machine Tool Building in 10;	A Delicate Lapping Operation Stilwell, Charles J.:	121
Screw-heads, Fixture for Slotting. Phil. E. Veraa 665 Screw Machine, see also Automatic	Special Tool, Die, and Machine Shop Institute, Inc. :	Machine Tool Builders' Association Extends Welcome to Exposition	6
Serew Machine. Di-Matic Automatic 477	Hudson River Valley Division Holds Regular Monthly Meetings 445	Stock Reel, Motor-driven Automatic Stokerunit Corporation .	
Screw Machine, National Acme Single-spindle	Monthly Meetings 445 "Speed-Bloc" Sander, Sterling Improved 564 Speedcut, Lathes and Star Centering Machines,	Pinnsley Drosision Poving Machine of Unit Type	348 694
Screw Machines, Designing Cams for Automatic.	Lo-Swing and 51 "Spee-Dee" Lathe Grinder 817	Stones, Ideal Commutator and Slip-ring Resurfacing Stops, Youngstown Improved Safety Limit Straightening Machine for Wide Coiled Stock,	343
I. A. Swidlo:	Speed Pre-selector, Warner & Swasey Cutting 282	Feeding and	618
Screws and Bolts, Phillips Self-centering-head. 232-A	Speed Ratchet Control, Reeves Automatic Variable- Speed Recorders, Leeds & Northrup Micromax 561	Straightening Machine, Lewis Wire- Strand & Co., N. A.: Three-speed Flexible-shaft Machines	478
Scriber, F.: Clamps Designed to Give Wide Opening for	Speed Reducer, Bodine Worm-gear 353 Speed Reducer, Reeves Giant Vertical 232 C	Three-speed Flexible-shaft Machines Strikes. Failure to Fulfill Contracts Because of Leo T. Parker	410
Sebastian Lathe Co.:	Speed Reducers, Dieni Helical and Worm 221 Speed Reducers D. O. James 250	Leo T. Parker Stripper for Piercing Punch, Metal-faced Rubber.	600
Motor Drive Attachment for Cone-head Lathes. 284 Security Program Without Government Coercion.	Speed Reducers, Link-Belt Worm-gear 351 Speed Reducers, Sier-Bath Plain and Motorized 164	William Steuer High-intensity	326
A Social	Speed Reducers, Smith Planetary 630 Speed-Trol Motors, Sterling 759	Struthers Dunn, Inc.: Motor-operated Timing Devices	814
Tool for Roring Large Spherical Cavitics 299	Speed (Variable) Drive, Reeves Self-contained 561 Speed (Variable) Transmissions, Improved Oilgear 560	Stud-setters, Modern Tool Works' Self-opening Stupakoff Laboratories:	227
Seismo-Damper for Isolating Vibrations, Korfund 3523 Selector, Warner & Swasey Cutting Speed Pre-282	Speedway Mfg. Co.: "Flea Power" Motor	Comparator Microscope for Toolmakers Suggestion System, Another Successful	421
Sell, It is Not Enough that It Works—It Must. 250 Seneca Falls Machine Co.:	"Speedwitch" Flexible-shaft Grinder 422	Suggestion Systems Produce Results: Do rampioye.	204
Lo-Swing and Speedcut Lathes and Star Center- ing Machines 51	Spindle Nose for LeBlond Lathes, Tapered and Keyed	C. B. Auel Summerill Tubing Co.:	224
Lathe Equipped with Automatic Work-handling Device 810	Spindle Nose for Monarch Lathes, Cam-lock Flanged	3200 Feet of Steel Tubing to the Pound Drawn Tubing 0.009 Inch in Diameter	440
Electric Furnace for Hardening High-speed Steel 88	Spindle Nose, Reed-Prentice Lathes Equipped with Tapered and Keyed	Sundstrand Machine Tool Co.: Automatic Stub Lathe, "Electromil" for High- speed Milling, and Hydraulic Sliding-head Unit	
Die Arranged for Economical Production of	Spindles, Precision Operations in the Manufacture of Turret Lathe. William J. Burger	speed Milling, and Hydraulic Sliding-head Unit Hydraulic Pump, Control Valve, and Circuit	$\frac{39}{347}$
Server F: 792	Spline Shafts, Laying Out Hobs for. Earle	Milling Cylinder Blocks by the Rigidmii Auto-	
Indexing Jig with Revolving Work-retainer. 661 Grid, Piercing and Forming Die	Spaces Made by Die casting and Coining Silver 910	matic Process "Superector" Reversible Ratchet Wrenches. Williams	759
	Spraying Process. The Possibilities of the Metal., 186 Spring Grinding Machine, 689	Williams. Superior Die Casting Co. Large Aluminum and Zinc-base Alloy Die-cast-	
	Springs, Danly Flat-rounded Die 817 Springs Material for Corresion-resisting 128	ings	273
Long Casting Sees of Jaws for Centering Shafer, Arthur A., Obituary of Shaper and Shaper-planer, Rockford "Hydraulic" 42 Shaper and Worm-lapping Machine, Fellows Hour- glass-worm Gear	Springer, J. F.:		675
Shaper and Worm-lapping Machine, Fellows Hour- glass-worm Gear	Radium as a Means of Inspection	cinnati Bickford Three-foot	
Shaper, Gould & Eberhardt Tool-room 6	Heavy-duty 'Ball-bearing Geared-head Engine Lathe 220 Souare Mann Cast-iron Precision 291	"Super-Service" Sander	04-17
glass-worm Gear 114 Shaper, Gould & Eberhardt Tool-room 6 Shaper, Ohio Universal "Perfection" 64-F Shaper Table, Ohio Universal 61 Shaper with Special Attachments for Boulder Dam	Souare. Mann Cast-iron Precision	cinnati-Bickford Improved	562
			420 188-A
Sharpening Machine Wells Drill 283	All-steel Box Truck	Surface Plate Set at Convenient Height, Tool- maker's Fred B. Jacobs	328
an Extensive Line of Procedural Broach Co. Develops	All-steel Box Truck Stacking Articles at the Delivery End of a Conveying Belt. Mechanism for. F. R. Zimmerman Stainless Steel Bars with Inserts of Low-carbon Steel.	Swaging Dies Supplant Hand-chasing for Finishing	259
Crane & Hoist Co., Inc.:		Swaging Pross with Indexing Dies Oilgear 100-ton	1
Grip Litter for Cranes and Hoists 166. Hand-operated Hoists 21s Shear and Welder, Glascock Shear Blades, Hard-facing Increases Life of 44 Shear, Stanley Portable Shears, Niagara Foot-operated Squaring 28 Shears, Niagara Power Squaring 65 Sheave for Variable-speed Texrope Drives, Allis Chalmers Vari-Fitch 64-1	Stainless Steel Developed by U. S. Steel, A Free-	Horizontal Swain, John D., Personal of Swasey, Ambrose, Eighty-eighth Birthday of	679
Shear Blades, Hard-facing Increases Life of 44:	machining. 27: Stainless Steel, Motion Picture of 326 Stainless Steel Now Used in Bronze Valves 269	Swasey, Ambrose, Eighty-eighth Birthday of	355
Shears, Niagara Foot-operated Squaring	Stainless Steel Resist Highly Corrosive Chemicals, Molybdenum Makes 607	Swidlo, I. A.:	
Sheave for Variable-speed Texrope Drives, Allis-	Molybdonum Makes 607 Stainless Steel, The Navy is the Biggest User of 468 Stainless Steel Tubing Now Made by Allegheny,	1	641
Chalmers "Vari-Pitch" Textsee	Thin-wall	Switch for Motors and Generators, Field-discharge	e 809
Sheet Metal, Equipment for Forming and Finishing 15:	Stainless Steel Used on the Normandle, One Hundred Tons of	Switch for Overload Protection, Colt-Noark "Protectit"	. 41.4
Sheeting as Thin as 0.001 Inch Produced by	Hundred Tons of 273 Stainless Steels Gain Ground Steadily 133 "Sta-Kool" Holder for Truing Diamonds 288 Stamp, Numberall Heavy-duty Rotary 698	Switch Operated by One-half Ounce Pressure,	
		Switches for Machine Tools "Durakool" Mercury	t 712 694
Shephard, F. P., Personal of	Stamp with Quick-change Feature, Numbering 75, Stamping, and Piercing Press, Flexo Cutting-off. 81; Standard Electrical Tool Co.:	Switches, GE Push-button and Rotating-drum	8 359
Shemen Gage Corporation: Adjustable Plug Gages 81 Shephard, F. P. Personal of 760-1 Shore, Albert F. Obituary of 488-1 Shot-welding? What is, Charles O. Herb 9 Sier-Bath Gear Co.	Relective-speed Polishing and Buffing Machine, 62:	Switel Joint Mechanism for Changing Direction of Movement. F. Server	f 784
Plain and Motorized Speed Podpages		Synthane Corporation: "Noisometer"—a Device for Recording Noise	
Signal Electric Mfg. Co.: Fractional-horsepower Motor with Back-gear	Wheels 696-6 Standards for Drafting-room Symbols 232-6	Noisometer —a Device for Recording Noise	. 403
Reduction	A Standards for Surface Crinders of the Reciprocat-		
Signoretti, Arthur: Jig for Drilling Elongated Holes "Silmo"—a New Steel that Combines High-tem-	Dings and Fittings Possemmended 42	Table for Jig Boring Machine, Pratt & Whitney	y 86
perature Strength and Oxidation Resistance. 67	4 Standish, Miles E., Personal of	7 Tilting 8 Table, Ohio Universal Shaper "Tabor-Brasive" Cut-off Machines	617
Silver Made by the Chinese Long Before the Christian Era, Nickel Silverbond—a Composite Stainless Steel Stock. 20			476
Silverbond—a Composite Stainless Steel Stock. 20 Simplex Milling Machine Equipped for Milling Front Axles, Milwaukee 55	8 Flexible-shaft Grinder Stanley Rule & Level Plant: 2 "Victor" Light-weight Portable Electric Drill. 75	Taft-Peirce Mfg. Co.:	
Front Axies, Milwaukee 55	2 "Victor" Light-weight Portable Electric Drill. 75	Swiveling and Tilting Magnetic Chuck	. 30

Taitoute Iron & Steel Co.: Chromium-molybdenum Steel Eliminates a Gear-	Typical Applications of Roller Bearings to Machine Tools	Tuthill Pump Co.: "Fuelstat." Control
Tann, Walter L., Personal of	Timken Steel & Tube Co.: "Silmo"—a Steel that Combines High-tempera-	Twomley, H. E.; Handy Drawing-board for the Briefcase 482
Tap with Micro Adjustment, Collapsible	ture Strength and Oxidation Resistance. 674 Tinning Process, A New De- 313	U
Taps, Oil Type Trip-ring for Landis Collapsible. 350 Taps? What Do We Gain by Using Ground-thread	Titan Metal Mfg. Co.: A Million and a Half Brass Die-castings Yearly 361 The Dies Used in Brass Die-casting	Udylite Co.:
H. Goldberg 765 Tapping and Drilling Fixture Haskins 744 Tapping Attachment, Etteo-Emrick High-speed 158	Toledo Machine & Tool Co.:	Humidified Buffing and Polishing Wheels 230 Ball Anodes for Plating 231 Semi-automatic Plating Mechine 231
Tapping Attachment, Procunier High-speed	Making Automobile License Plates 657 Toledo Scale Co.:	Sam Anouse for Plating Machine 231 Semi-automatic Plating Machine 344 Ultra-Optimeter, Measuring to Millionths Made Easy by the Use of the 890 Unemployment, Machinery and 652 "Unichrome Resist" Lacquer for Use in Chromium
Tapping Drilling, and Milling Machine, Kingsbury Fleximatic		
Tapping Machine, Crankshaft Drilling Milling	Scale 377 Toledo Synthetic Products, Inc.: Plaskon—a New Plastic Material 169	Plating
Countersinking, Reaming and 550 Tapping Machine, Haskins Heavy-duty 478 Tapping Machine, Nateo High-production Drilling	Tomney, Charles C.:	Grinder for End-mills and Reamers 683 Unishear, Stanley Portable 218 United Chromium, Inc.:
and 549 Tapping Machines, Langelier Drilling and 623 Tapping Troubles, How to Overcome Some. George	Indexing Fixture for Machining Compressor	Stop-off Lacquer for Use in Chromium Plating 164
W. Emrick 575	Method that Insures Boring Split Bearings on Exact Center Line	United Engineering & Foundry Co.: Manipulator for Tilting Heavy Work when Welding
Tax a Protective Tariff Against Other States?	Special Gaging Equipment for Compressor Crank- shaft. Jig with Quick-acting Clamping Nut of Slotted	A Stainless Steel with Free-machining Qualities 272
Taxation—We are All Helping to Pay 207	Type. 274 Force Fit Assembling of Parts on a Shaft. 458	U. S. Electrical Motors, Inc.: Varidrive Motor of Upright Design 288 U. S. Tool Company, Inc.: Motor-driven Automatic Stock Reel 482
A Century of Machine Tool Building 474	Tool. Dumore Vari-speed Flexible-shaft	
Taylor, C. M.: Welding Machines for Assembling Automobile Parts	Tool for Expanding Piston-ring. Joseph Waitkus 199 Tool-holder, Glenco Compensating 91 Tool-room Machine, Keller Automatic 60	Operation
Building Oil-well Drilling Equipment by the Use	Tool Steels, The Search for Better Quality in. C. A. Liedholm	Universal Engineering Co.:
Taylor Mfg. Corporation: "Hi-Eff" Dynamometer	C. A. Liedholm 666 Tool Upkeep May Change Failure to Success, Attention to Machine and Vernon E. Davis 471 Tools, Chromium-plated Cutting 792	Two New Collet Chucks
Non-porous Protective Coatings for Metal and	Tools, Eliminating Soft Spots from Hardened. 600	Universal High Speed Tool Co.: Eklind Universal High-speed Milling Head 152
Non-metallic Surfaces 239 Teco Steel Cutting Carbide Composition 695 Testor Rabb R Personal of 2291	Tools in Present-day Shop Practice, Cemented- carbide Cutting Roger D. Prosser 268	Universal joint Crosses, Grinding
Teetor, Ralph R. Personal of 232-D Telescope, Machining Operations on a Huge, Charles O. Herb 233	in Jigs and. Vernon E. Davis 659	of
"Tel-Temp"—a Device that Shows Bearing Temperatures 93 Temperature Recording Controller, Micromax 754	Tools, Present Status of Cemented-carbide Cutting 167 Tools, Rotor Electric and Air	V V
Temperatures, Device for Indicating Machine and	Chamberland	Valentine, Kenneth S., Personal of 488 Valve Bodies and Wedges, Coulter Automatic for Paging Cate
Bearing 93 Temperatures, Test Blocks for Furnace, R. C. 327	Torch, Torit Improved Air-gas 163 Torch, "Weldmaster" 690 Torit Mfg. Co.:	Facing Gate 814 Valve for Controlling Pneumatic or Hydraulic Equipment, Manifold 626
Templet and Master Plate for Automatic Cutting Machine. Adjustable. Joseph Waitkus 75	Improved Air-gas Torch	Two-way Air. George L. Pyritz
Templets Facilitate Accurate Nibbling of Airplane	Preventing Soldering Irons from Overheating. 665 Trailer with Pneumatic Rubber Tires, Mercury. 28.3	Valve, Ross Solenoid-controlled Air 683 Valves, Nicholson Hydraulic 693 Valves, Precision Turning and Boring of Air-brake.
Testing Cone Worm-gearing, Equipment for Cutting Lapping, and Testing Gages, Rapid Pressure Booster for 548	Training, American Industries Must Face Problem of Trade	Valves, Precision Turning and Boring of Air-brake. C. A. Birkebak
Testing Gages, Rapid Pressure Booster for 548 Testing Hourglass Steering Worms, Fellows "Red Liner" for 745	Training, Attention Must be Given to the Matter	V & O Press Co.: High-speed Notching Press
Testing Machine for Sheet Metal, A Swiss 189 Testing of Eccentric Throw, Fixture for the Ac-	Training Supervisors and Key Men	Van Dorn Electric Tool Co.: Electric Tools with Increased Power and
Texas Co.: 199	Traner, Emil C., Personal of 696-A Transformer Cooling Tubes, Welding Machine Per- forms Six Operations in Fabricating 243	Lighter Weight
Lubrication Problems Require Thorough Study 201 Themac Precision Grinder	Transformer for Portable Equipment, Forbes &	Van Keuren Co.: Improved Light Wave Measuring Equipment 565 Van Norman Machine Tool Co.:
Industrial Brake Lining	Transmission, Giant Variable-speed	New Line of Milling Machines 58 High-speed Piston Grinding Machine 348 Varidrive Motor of Upright Design 288
Thermometer, Brown Portable Recording 565 Thermometer for Indicating Machine and Bearing Temperatures	Transmission Lenney Variable-speed	
Thiokol Available for Various Industrial Uses, Cements Containing Various Industrial Uses,	Transmission, Link-Belt Motorized Variable-speed. 163 Transmission, Variable-speed Hydraulic 290	Drives, Allis-Chalmers 64-F V-belts, "Daycoil" Oil-proof 64-A
Thomson-Gibb Electric Welding Co.: Reducing Costs by Flash-welding Automobile	Transmissions, Improved Oilgear Variable-speed. 560 Transmissions, Lenney Variable-speed. 418 Transmissions, Oil for Hydraulic. 567	Ventilating System, Piston Anodizing Tank with Cooling and
Radiator Shells New Spot-welder for Experimental and Development Work 270	Trent Co., Harold E.: Electric Furnace 564	Veraa, Phil. E.: Marking on Metal Toys 185 Boring Tool with Micrometer Adjustment 595
When is Resistance Welding Applicable? 297	Triangles. Simple Formulas for Obtuse-angled. Fred G. Kenyon	Fixture for Slotting Screw-heads
Spot-welding Machine for Corrosion-resisting Plates. 684	Trico Fuse Mfg. Co.: "Drip-Drop" and "Opto-Matic" Visible	Vibrations, Reducing Machine 355 Vibratior, Aiax Mechanical 480 "Victor" Light-weight Portable Electric Drill 758
Ther Electric Drill of Midget Proportions	Lubricators 349 Tri-lock Cutter for Keyway Milling, Ingersoll 630	Vise and Portable Stand, Armstrong 692
Thornton, H.: Dies for Making Flanged Rectangular Parts from Strip Stock	Trimming and Beading Machine for Stampings. Quickwork	Vise Fittings Serve as Substitute for Parallels of Different Heights, Stepped, Peter Budwitz 274
Thread-cutting Machine, Landis Hydraulically Operated 34	Truck, Elwell-Parker Elevator 229 Truck, Lyon 15-ton Hydraulic Lift-624	Vocational Guidance to High-school Students, De-
Thread Grinding and Carbide Tool Grinding Ma- chines, Ex-Cell-O 23	Truck, Mercury Heavy-duty Electric	troit Engineers Give
Thread Grinding as a Manufacturing Process, Precision	Truck Stackbin All-steel Box 82 Truck Streamline Five-ton "Hylift" 29 Truck with Center Control, Tiering Fork 616	W Wagner, Peter P., Personal of
Thread Grinding Machine, Ex-Cell-O Precision 685 Thread Grinding Machine, Jones & Lamson Automatic. 807	Trucks, Mercury Electric	Wagner Electric Corporation: Fractional-horsepower Gear-motors
Thread Grinding Machine, Newall Automatic	Trucks, Yale & Towne Hand-operated Lifting 812 "Truc-Grip" Tapping Attachment Procunier 628	Waitkus, Joseph:
Threads on a Gear-hobbing Machine, Milling. O. S. Marshall	Trucks, Swies-tork Adachment of Blass-Kanlang Soft Trucks, Yale & Towne Hand-operated Lifting. 812 "True-Grip" Tapping Attachment, Procunier. 628 Truing Devices, Grinding Wheel, William C. Betz 701 Trunnions in Accurate Alignment, Fixture for 10.75	Tool for Expanding Piston-ring 199 Fixture with Interchangeable Indexing Bar for
for Milling External and Internal	Tubes of Alloy Steel for Use at High Temperatures,	Spacing Rivet Holes
Threading and Bucking-up Machine, Oster Rapiduction Pipe 746 Threading and Cutting Machine, Chucks for	Seamless 404 Tubing 0.009 Inch in Diameter, Drawn 440 Tubing Now Made by Diameter, Thin wall Stain	Waitkus, Jr., Vincent: Two-purpose Intermittent Drive Mechanism 587 Waldron Corporation, John:
Landis Pipe 690 Threading Machine, Acme Bolt- 15	Tubing Now Made by Allegheny, Thin-wall Stain- less Steel	Gear Type Couplings
Threading Machine, Acme Double-head 810	Tumbling Machine, Barber Continuous 279 Tungsten Carbide Tool Co.:	Walker Co., Inc., O. S.; 66-inch Rotary Magnetic Chuck 86
Threading Machine, Attachment for Landmaco. 92	Lathe Centers Tipped with Tungsten Carbide. 344 Tungsten Electric Corporation:	Walker, R. J.: Replacement of Machine Tools in Navy Yards. 438 Walser Automatic Timer Co.:
Threading Machine, Hall Single-head Pipe 57 Threading Machine, H&G 64-C Threading Machine, Magazine Feed for Landis	Teco Steel Cutting Carbide Composition 695 Turner, Robert Tifft, Obituary of 360-A	Jewel Motor-operated Timer 559 Waltham Machine Works:
Forming and	Turning and Boring of Air-brake Valves, Precision C. A. Birkebak	Thread Milling Machine
Threading Machine, Special Work-holding Fixture for Landis	C. A. Birkebak 321 Turning, Boring, and Facing Head, Craley 631 Turning Tool, R. & L 289 Turning Tools, Mitco Pin-Splice 346 Turret Lathe Designed for Fast Manipulation,	Warner & Swasey Co.: Turret Lathe Improvements
Threading Machine with Sliding Die-head, Geometric 59 Threading Machine, Work Aligning and Indexing		Manufacturing Hardened and Ground Gears for Turret Lathes
Fixtures for	Turret Lathe Gisholt 18-inch High-speed 475	Modern Astronomy Relies on the Machine Shop 233 Cutting Speed Pre-selector 282
Threading Two-ton Oil-well Pipes on Heavy-duty Turret Lathes. Lorenz Leifer Timer. Walser Motor-merated 550	Turret Lathe, Hydraulically Operated Center and Pilot Support for, I. F. Yeoman 726 Turret Lathe Improvements, Warner & Swasey 46	Cutting Speed Pre-selector 282 Precision Operations in the Manufacture of Turret Lathe Spindles 769
Timer, Walser Motor-operated 559 Timer, Welco Electro-mechanical Welding 288 Timing a Revolving Shaft, Mechanism for.	Manufacture of William J. Burger 769	Watervliet Tool Co., Inc.: Expansion Reamer for Motor Shaft Bushings 816 Wear and Corrosion, Treating Metallic Surfaces to
L. Kasper 67 Timing Devices Struthers Motor-operated 814	Turret Lathe with Cross-sliding Turret Jones &	Webster, T. Frank, Personal of
Timing Has Greatly Increased the Scope of Spot- welding Accurate Dr Paul G Weiller 655	Lamson Saddle Type 221 Turret Lathes, Gishol Ram Type 279 Turret Lathes, Manufacturing Hardened and	Weckstein, S. M.: Typical Applications of Roller Bearings to
Timken Roller Bearing Co.: Measuring the Finish on Timken Bearings 166 Simplified Anti-friction Bearing Mounting for	Turret Lathes. Manufacturing Hardened and Ground Gears for. W. J. Burger	Weddell, Ralph R.:
Simplified Anti-friction Bearing Mounting for Boring Mill Table	on Heavy-duty, Lorenz Leifer	Radius Grinding Fixture for Milling Cutters 385 Weiller. Dr. Paul G.: Accurate Timing Has Greatly Increased the
Machining Operations	Lamson Saddle Type	Scope of Spot-welding 655

Welco Electro-mechanical welding Timer 200	Weiding, Using Carbon Rous, Plates, and Paste to	wire-forming Sinde, Pressure Equanzing Attach-
Weldability of Materials	Facilitate	ment for. L. Kasper 791
Co., Inc.:	Welding? What is Shot. Charles O. Herb 9	Wire-straightening Machine, Lewis 618
Acco Utility Jack 347	"Weldmaster" Torch	Wire to a Diameter of One-half Millimeter, Grind-
Welded Fixtures, Savings Due to Using 466	Weldon Tool Co.:	ing Cobalt. O. S. Marshall
Welded Products, Design Chart for Arc 734		"Wonder" Alternating-current Welders, Miller 232-F Wood Used for Dies in Forming Airplane Parts,
Welded Repairs, Saving 80 Per Cent on 312	End-mill Sharpening Fixture	Wood Used for Dies in Forming Airplane Parts,
Welded Structures, Steel Castings for 327	weids in Aluminum, Reducing Porosity of 12	Rubber and. Charles O. Herb 425
Welded Tubules Deities Castings for 321	Well Drilling Equipment by the Use of Arc	Woods, George R., Personal of 358 "Workshop" Lathe, Underneath Drive for South
Welded Tubular Railing	Welding, Building Oil-, C. M. Taylor 582	"Workshop" Lathe, Underneath Drive for South
Welded Versus Cast Carburizing Boxes 185	Wells Mfg. Co.:	
Welder and Trimmer for Wire and Cable, Eisler. 157	Drill-sharpening Machine	"Workshop" Lathe with V-belt Drive, South Bend
Welder Control, Clark Air-operated Spot 92	Welton, P. E., Personal of	9-inch
Welder, Federal Percussion 154 Welder for Experimental and Development Work,	Wesson Co.:	Worm-gearing, Equipment for Cutting, Lapping,
Welder for Experimental and Development Work,	Lapping Machine for Cemented-carbide Tools 64-B	and Testing Cone
New Spot	Westinghouse Electric & Mfg. Co.:	Worm-gears Caused by Lack of Lubrication, Ex-
Welder, Glascock Shear and 90	Contactor for Built-in Applications 23	Worm-lapping Machine, Fellows Hourglass-worm
Welder, Harnischfeger General Utility 483	Electro-dynamic Balancing Machine 40	Worm-lapping Machine, Fellows Hourglass-worm
Wolder Lincoln Engine-driven 224	Transformer Type Welders	Gear Shaper and
Welder of Greater Amperage, Harnischfeger 554	Transformer Type Welders	Worm Lapping Machine, Michigan Steering-gear, 155
Welder, Westinghouse Direct-current 285	tion	Worm thread Crinder Higgs Destable 959
Welder with Hydraulically Actuated Electrodes	tion 254 Flexarc Direct-current Welder 285	Worm-thread Grinder, Hisey Portable 353 Worms, Fellows "Red Liner" for Checking Hour-
Federal "Oil Spot" 82 Welders Built with Turret Tops, Hobart Arc 30 Welders, Miller Alternating-current 232-18	Fiftieth Anniversary of Company Celebrated 334	worms, renows Red Liner for Checking Hour-
Welders Built with Turret Tops Hobart Arc. 30	High-intensity Strohoglow 240	glass Steering 74.7 Wrench for Hexagonal Fittings, "No-Mar" 163 Wrench for Nuts and Staybolts, Thor 759
Welders Miller Alternating-current 232-R	High-intensity Stroboglow	Wrench for Hexagonal Fittings, "No-Mar" 163
Welders, Westinghouse Transformer Type 156	Do Employe Suggestion Systems Declare De	Wrench for Nuts and Staybolts, Thor 759
Wolding A New Use for Floring Are 254	Do Employe Suggestion Systems Produce Re-	Wrench Holder, Cleveland Socket 565
Welding, A New Use for Electric Arc 354 Welding, Accurate Timing Has Greatly Increased the Scope of Spot. Dr. Paul G. Weiller 655	sults?	Wrench with Cross-locked Jaw, Walworth Pipe 152
the Coope of Cost Dr. Deul C. Weiller 022	New Westinghouse Motors 685	Wrenches, Williams "Superector" Reversible
the scope of spot. Dr. Paul G. Weller 655	New Plant for Manufacturing Air-conditioning	Retchet 750
Welding and Cutting Progress, Oxy-acetylene 400 Welding Applicable? When is Resistance. M. L.	Units	Wright David & Porconal of 494
weiging Applicable? when is Resistance, M. L.	Machine Tool Electrification Forum 824	Ratchet 759 Wright, David S., Personal of 424 Wright, Inc., L. G.:
Eckman 297	Weston Electrical Instrument Corporation:	Wright, Inc., D. G.:
Welding Automobile Radiator Shells, Reducing	Photo-cell Control for Industrial Applications. 755	Wrigraph Drafting Machine 480
Costs by Flash 67	Wetherill Engineering Co :	Wright, J. D., Personal of 568 Wright Mfg. Division of the American Chain Co.,
Costs by Flash- Welding Brass, Bronze, and Copper, Electrode for 484	Wetherill Engineering Co.: Now—Cast-iron Die-castings	
Welding, Building Oil-well Drilling Equipment by	Wheel Dresser, Dumore Diamond-point Grinding, 818	Inc.:
the Use of Arc. C. M. Taylor 582	Wheel dressing Derice Veriable The Armong 818	Hydraulic and Screw Presses 420
Welding Cable Connector, Quick-detachable 278	Wheel-dressing Device, Variable Feed Arrangement	Wrigraph Drafting Machine 480
Welding Cable, Designed for Wear Resistance 162	for Automatic. John A. Honegger 785	Wilgiaph Diarring Machine
Welding Cable Designed for Wear Resistance 162 Welding Electrodes. "Smoothare" 751	for Automatic. John A. Honegger	
Welding Cable Designed for Wear Resistance. 162 Welding Electrodes, "Smoothare" 751 Welding Facilitates Fabrication of Small Racing	for Automatic. John A. Honegger	Y
Welding Building Oil-well Drilling Equipment by the Use of Arc. C. M. Taylor 582 Welding Cable Connector, Quick-detachable 278 Welding Cable Designed for Wear Resistance 162 Welding Electrodes, "Smoothare" 751 Welding Facilitates Fabrication of Small Racing Cars.	for Automatic. John A. Honegger	Y
CHIN	for Automatic. John A. Honegger	Y Yale & Towne Mfg. Co.:
Welding Field, An Anniversary in the 673	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborandum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc. S. B. Adjustable, Performance M. Netching Dice.	Y Yale & Towne Mfg. Co.; Hand-operated Lifting Trucks 815
Welding Field, An Anniversary in the	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborandum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc. S. B. Adjustable, Performance M. Netching Dice.	Y Yale & Towne Mfg. Co.; Hand-operated Lifting Trucks 815
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler. 198 Welding in Refrigerator Manufacture, Resistance.	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborandum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc. S. B. Adjustable, Performance M. Netching Dice.	Y Yale & Towne Mfg. Co.; Hand-operated Lifting Trucks 815
Welding Field, An Anniversary in the	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborandum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc. S. B. Adjustable, Performance M. Netching Dice.	Y Yale & Towne Mfg. Co.; Hand-operated Lifting Trucks 815
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler. 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot 632	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc., S. B.; Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.; Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 815 Yates, F. B., Personal of 488 Yellow-Back Series, Review of MACHINERY'S 186 Yensen, Trygve D., Personal of 232-b
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot- Welding Machine for Corrosion-resisting Plates,	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White, Frederick Rollin, Obituary of	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 164 Yensen, Trygve D., Personal of 232-P
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler. 198 Welding in Refrigerator Manufacture, Resistance. M. L. Eckman 590 Welding Machine, Acme Spot. 632 Welding Machine for Corrosion-resisting Plates, Spot.	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffling and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.; Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.; Open-mesh Conveyor Chains 758	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 550 Welding Machine, Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot 805 Welding Machine for Sheet Steel, Thomson-Gibb	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc., S. B.; Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.; Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.; Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.;	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 726
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance. M. L. Eckman 590 Welding Machine Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot- Welding Machine for Sheet Steel, Thomson-Gibb Flash 618	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 558	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance. M. L. Eckman 590 Welding Machine Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot- Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc., S. B.: Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 568 Wick, Jr., James L., Personal of 696-B	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 726
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance 590 M. L. Eckman 590 Welding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 558 Wicks Bros.:	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 726
Welding Field, An Anniversary in the 673 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot Spot 884 Welding Machine for Sheet Steel, Thomson-Gibb Flash Flash 618 Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons, Inc., S. B.: Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 568 Wick, Jr., James L., Personal of 696-B	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 726
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot Welding Machine for Corrosion-resisting Plates, Spot Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines For Assembling Automobile	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffling and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.; Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.; Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.; Light-weight Bending Brake 558 Wick, Jr., James L., Personal of 696-B Wickes Bros.; Automatic Center-drive Crankshaft Lathe 84	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 726 Youngstown Improved Safety Limit Stops 343
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot Welding Machine for Sheet Steel, Thomson-Gibb Flash 684 Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines Fisler Box Type 615 Welding Machines for Assembling Automobile Parts. C. M. Taylor 175	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Bons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co. Light-weight Bending Brake 558 Wickes Bros.: Automatic Center-drive Crankshaft Lathe 984 Duplex Lathe for Heavy Crankshafts 619	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. I. Eckman 590 Welding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Welding Machines, Eisler Box Type 615 Welding Machines, Eisler Box Type 615 Welding Machines for Assembling Automobile Parts C. M. Taylor 175 Welding Machines for Assembling Oil Filters, 175	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffling and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.; Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.; Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.; Light-weight Bending Brake 558 Wick, Jr., James L., Personal of 696-B Wickes Bros.; Automatic Center-drive Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines For Assembling Automobile Parts. C. M. Taylor Welding Machines for Assembling Oil Filters, Electric 557	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B.: Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White Engineering Laboratories, Inc.: 419 White, Frederick Rollin. Obituary of 760-D Whitney Chain & Mig. Co.: 758 Whitney Metal Tool Co. Light-weight Bending Brake 558 Wicks Bros.: 458 Wickes Bros.: 469 Automatic Center-drive Crankshaft Lathe 50 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 48: Yellow-Back Series, Review of Machinery's 16: Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72: Youngstown Improved Safety Limit Stops 34: Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Cutters with Cemented-carbide Blades,
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 M. I. Bekman 590 Welding Machine, Acme Spot- Welding Machine for Corrosion-resisting Plates, Spot- Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Assembling Automobile Parts C. M. Taylor Welding Machines, For Assembling Oil Filters, Electric Electric 557 Welding Machines, Harnischfeger Heavy-duty Arc 53	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffling and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.; Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.; Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.; Light-weight Bending Brake 558 Wick, Jr., James L., Personal of 696-B Wickes, Jr., James L., Personal of 84 Duplex Lathe for Heavy Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358 Willett, Warren P:	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 166 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 564
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 M. I. Bekman 590 Welding Machine, Acme Spot- Welding Machine for Corrosion-resisting Plates, Spot- Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Assembling Automobile Parts C. M. Taylor Welding Machines, For Assembling Oil Filters, Electric Electric 557 Welding Machines, Harnischfeger Heavy-duty Arc 53	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B.: Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White Engineering Laboratories, Inc.: 419 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mig. Co.: 760-D Whitney Grain & Mig. Co.: 758 Whitney Metal Tool Co. Light-weight Bending Brake 558 Wickes Bros.: Automatic Center-drive Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358 Willett, Warren P. Corrugating Drawn Shells with Dies Using	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 166 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 564
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. I. Eckman 590 Welding Machine, Acme Spot- 632 Welding Machine for Corrosion-resisting Plates, Spot- 684 Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines for Assembling Automobile Parts C. M. Taylor 175 Welding Machines for Assembling Oil Filters, Electric 557 Welding Machines, Harnischfeger Heavy-duty Arc 53 Welding Machines in Building Ford V-Eights. 5510	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding, William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffling and Polishing 230 Whistler & Sons, Inc., S. B. Adjustable Perforating and Notching Dies 419 White Enzineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 558 Wicks Bros.: Automatic Center-drive Crankshaft Lathe 84 Wicks Bros.: Automatic Center-drive Crankshafts 619 Wickmander O. R., Personal of 358 Wilekt Warren P: Corrugating Drawn Shells with Dies Using Steel Balls 388	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 566 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Halpneman, Co.
Welding Field, An Anniversary in the 473 Welding, Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. I. Eckman 590 Welding Machine, Acme Spot- 632 Welding Machine for Corrosion-resisting Plates, Spot- 684 Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines for Assembling Automobile Parts C. M. Taylor 175 Welding Machines for Assembling Oil Filters, Electric 557 Welding Machines, Harnischfeger Heavy-duty Arc 53 Welding Machines in Building Ford V-Eights. 5510	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Bons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: 760-D Whitney Chain & Mfg. Co.: 558 White, Frederick Rollin, Obituary of 696-B Wickes Bros.: 558 Wickes Bros.: 558 Wickes Bros.: 400-Bros.	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 566 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Halpneman, Co.
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 M. I. Bekman 590 Welding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machines For Assembling Automobile Parts C. M. Taylor Welding Machines for Assembling Oil Filters, Electric Electric Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding, Manipulator for Tilting Heavy Work When. 399	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Bons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: 760-D Whitney Chain & Mfg. Co.: 558 White, Frederick Rollin, Obituary of 696-B Wickes Bros.: 558 Wickes Bros.: 558 Wickes Bros.: 400-Bros.	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 566 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Halpneman, Co.
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 M. I. Bekman 590 Welding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash 684 Welding Machine For Sheet Steel, Thomson-Gibb Flash 684 Welding Machine For Sheet Steel, Thomson-Gibb Flash 684 Welding Machines For Assembling Automobile Parts C. M. Taylor 175 Welding Machines for Assembling Oil Filters, Electric 557 Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines, In Building Ford V-Eights, Sparks Fly from 1600 Welding, Manipulator for Tilting Heavy Work When. 399	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Bons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: 760-D Whitney Chain & Mfg. Co.: 558 White, Frederick Rollin, Obituary of 696-B Wickes Bros.: 558 Wickes Bros.: 558 Wickes Bros.: 400-Bros.	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 566 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zee-Lock Halpneman, Co.
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. I. Eckman 590 Welding Machine, Acme Spot- 632 Welding Machine for Corrosion-resisting Plates, Spot- 641 Welding Machine for Sheet Steel, Thomson-Gibb Flash 641 Welding Machine For Sheet Steel, Thomson-Gibb Flash 641 Welding Machine For Sheet Steel, Thomson-Gibb Flash 641 Welding Machines For Assembling Automobile Parts C. M. Taylor 175 Welding Machines, For Assembling Oil Filters, Electric 641 Welding Machines, Harnischfeger Heavy-duty Arc 653 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 510 Welding, Manipulator for Tilting Heavy Work When, Manipulator for Tilting Heavy Work When, 767 Welding Operations, GE Cycle Recorder for 149 Welding Operations, Ger Cycle Recorder for 149 Welding Operations, Ger Weld in Florer for 149	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B. 230 Whistler & Sons. Inc. S. B. 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co. 760-D Whitney Chain & Mfg. Co. 760-D Whitney Metal Tool Co. 16 Uight-weight Bending Brake 558 Wickes Bros. 760 Wicked Jr., James L. Personal of 696-B Wickes Bros. 761 Automatic Center-drive Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander. O. R. Personal of 358 Willett, Warren P. Corrugating Drawn Shells with Dies Using Steel Balls 388 Williams & Co., J. H.: Agrippa Threading-tool Holder 759 "Supercetor" Reversible Ratchet Wrenches 759 Williams, Jack K. Personal of 632-B	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 81: Yates, F. B., Personal of 48: Yellow-Back Series, Review of Machinery's 16: Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72: Youngstown Improved Safety Limit Stops 34: Z Zee-Lock Core Drills and Reamers, Ingersoll 23-F Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 55: Lee-Lock Cutters with Cemented-carbide Blades, Ingersoll 41: Zeh & Hahnemann Co.: Variable-stroke Press 62: Zeigler, N. A., Personal of 232-F Zeigler, N. A., Personal of 232-F Zeigmerman, F. R.:
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. I. Eckman 590 Welding Machine, Acme Spot- 632 Welding Machine for Corrosion-resisting Plates, Spot- 641 Welding Machine for Sheet Steel, Thomson-Gibb Flash 641 Welding Machine For Sheet Steel, Thomson-Gibb Flash 641 Welding Machine For Sheet Steel, Thomson-Gibb Flash 641 Welding Machines For Assembling Automobile Parts C. M. Taylor 175 Welding Machines, For Assembling Oil Filters, Electric 641 Welding Machines, Harnischfeger Heavy-duty Arc 653 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 510 Welding, Manipulator for Tilting Heavy Work When, Manipulator for Tilting Heavy Work When, 767 Welding Operations, GE Cycle Recorder for 149 Welding Operations, Ger Cycle Recorder for 149 Welding Operations, Ger Weld in Florer for 149	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 218 White Engineering Laboratories, Inc.: 3760-D White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co. Open-mesh Conveyor Chains 758 Whitney Metal Tool Co. Light-weight Bending Brake 558 Wick, Jr., James L., Personal of 696-B Wicks, Bros.: Automatic 640-B Wicks Bros.: 369-B Wicks Bros.: 369-B Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358 Willett, Warren P. Corrugating Drawn Shells with Dies Using Steel Balls 388 Williams & Co., J. H.: Agrippa Threading-tool Holder 759 Williams, Jack K., Personal of 332-B Williams, S. D., Personal of 488-A Williams, S. D., Personal of 488-A Williams, S. D., Personal of 488-A	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 356 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zeh & Hahnemann Co.: Variable-stroke Press 622 Zeigher, N. A. Personal of 232-F Zimmerman, F. R.: Mechanism for Stacking Articles at the De-
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine, Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot 590 Welding Machine for Sheet Steel, Thomson-Gibb Flash 618 Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines for Assembling Oil Filters, Electric Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Manipulator for Tilting Heavy Work Welding Operations, GE Cycle Recorder for 149 Welding Operations, GE Cycle Recorder for 149 Welding Operations, GE Cycle Recorder for 149 Welding Practice, Terms Used in Electric 110 Welding Practice, Terms Used in Electric 110 Welding Research Extended 667	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B. 230 Whistler & Sons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co. 760-D Whitney Chain & Mfg. Co. 760-D Whitney Metal Tool Co. 160 Upen-mesh Conveyor Chains 758 White, Jr., James L. Personal of 696-B Wickes Bros. 758 Wickes Bros. 758 Automatic Center-drive Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358 Willett, Warren P. 759 Corrugating Drawn Shells with Dies Using Steel Balls 388 Williams & Co., J. H.: Agrippa Threading-tool Holder 759 Williams, Jack K. Personal of 482-B Williams, Jack K. Personal of 482-B Williams, Jack K. Personal of 488-A Williams, S. D., Personal of 488-A Williams, White & Co.	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 356 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zeh & Hahnemann Co.: Variable-stroke Press 622 Zeigher, N. A. Personal of 232-F Zimmerman, F. R.: Mechanism for Stacking Articles at the De-
Welding Field, An Anniversary in the Welding Forming Bosses by John E. Hyler 1988 Melding in Refrigerator Manufacture, Resistance Melding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines, For Assembling Automobile Parts C. M. Taylor Welding Machines for Assembling Oil Filters, Electric Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Heavy Work When. 3490 Welding Practice, Terms Used in Electric 160 Welding Research Extended 861 Kelding Rod, Columbium-treated Stainless-steel 165	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B. 230 Whistler & Sons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co. 760-D Whitney Chain & Mfg. Co. 760-D Whitney Metal Tool Co. 160 Upen-mesh Conveyor Chains 758 White, Jr., James L. Personal of 696-B Wickes Bros. 161 Automatic Center-drive Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358 Willett, Warren P. Corrugating Drawn Shells with Dies Using Steel Balls 388 Williams & Co., J. H.: Agrippa Threading-tool Holder 759 Williams, Jack K. Personal of 482-B Williams, Jack K. Personal of 482-B Williams, S. D., Personal of 488-A Williams, S. D., Personal of 488-A Williams, White & Co.	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinerry's 168 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 342 Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll Blades, Ingersoll 182 Lock Cutters with Cemented-carbide Blades, Ingersoll 182 Lock Hollow-mill, Ingersoll Adjustable 418 Zeh & Hahnemann Co.: Variable-stroke Press 622 Zeigler, N. A., Personal of 232-I Zimmerman, F. R.: Mechanism for Stacking Articles at the Delivery End of a Conveying Belt 532 Zimc and Ahuminum Die-castings, Finishing.
Welding Field, An Anniversary in the Welding Forming Bosses by John E. Hyler 1988 Melding in Refrigerator Manufacture, Resistance Melding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines, For Assembling Automobile Parts C. M. Taylor Welding Machines for Assembling Oil Filters, Electric Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Heavy Work When. 3490 Welding Practice, Terms Used in Electric 160 Welding Research Extended 861 Kelding Rod, Columbium-treated Stainless-steel 165	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 168 Yensen, Trygre D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll 356 Zee-Lock Cutters with Cemented-carbide Blades, Ingersoll 356 Zee-Lock Hollow-mill, Ingersoll Adjustable 418 Zeh & Hahnemann Co.: Variable-stroke Press 622 Zeigher, N. A. Personal of 232-F Zimmerman, F. R.: Mechanism for Stacking Articles at the De-
Welding Field, An Anniversary in the Welding Forming Bosses by John E. Hyler 1988 Melding in Refrigerator Manufacture, Resistance Melding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines, For Assembling Automobile Parts C. M. Taylor Welding Machines for Assembling Oil Filters, Electric Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Heavy Work When. 3490 Welding Practice, Terms Used in Electric 160 Welding Research Extended 861 Kelding Rod, Columbium-treated Stainless-steel 165	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinerry's 166 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll Blades, Ingersoll 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,
Welding Field, An Anniversary in the Welding Forming Bosses by John E. Hyler 1988 Melding in Refrigerator Manufacture, Resistance Melding Machine, Acme Spot-Welding Machine for Corrosion-resisting Plates, Spot-Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine Performs Six Operations in Fabricating Transformer Cooling Tubes 243 Welding Machines, Eisler Box Type 615 Welding Machines, For Assembling Automobile Parts C. M. Taylor Welding Machines for Assembling Oil Filters, Electric Welding Machines, Harnischfeger Heavy-duty Arc Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 Welding Machines in Building Heavy Work When. 3490 Welding Practice, Terms Used in Electric 160 Welding Research Extended 861 Kelding Rod, Columbium-treated Stainless-steel 165	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B.: Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Onen-mesh Conveyor Chains 758 Whitney Ghain & Mfg. Co.: Light-weight Bending Brake 558 Wick. Jr., James L., Personal of 696-B Wicks Bros.: Automatic Center-drive Crankshaft Lathe 84 Duplex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R., Personal of 358 Willett, Warren P.: Corrugating Drawn Shells with Dies Using Steel Balls 388 Williams & Co., J. H.: Agrippa Threading-tool Holder 759 Williams, Jack K., Personal of 632-B Williams, S. D., Personal of 488-A Williams, S. D., Personal of 488-A Williams, White & Co.: Two Osterholm Grinding Machines Used in Machining Automobile Cylinder Blocks 632-C	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygve D., Personal of 232-4 Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-4 Zee-Lock Counterbores, Ingersoll 81ades, Ingersoll 252-62-Lock Cutters with Cemented-carbide Blades, Ingersoll 412 Zeh & Hahnemann Co.: Variable-stroke Press 622 Zeigler, N. A., Personal of 232-1 Zimmerman, F. R.: Mechanism for Stacking Articles at the Delivery End of a Conveying Belt 532 Zime and Ahminum Die-castings, Finishing. Herbert Chase:
Welding Field, An Anniversary in the Welding Forming Bosses by John E. Hyler	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Bons. Inc. 8. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 558 Wickes Bros.: Automatic Center-drive Crankshaft Lathe 84 Unglex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R. Personal of 358 Williams & Co., J. H.: Agrippa Threating-tool Holder 78 Corrugating Drawn Shells with Dies Using Steel Balls 79 Steel Balls 79 Williams, Jack K. Personal of 632-B Williams, Jack K. Personal of 632-B Williams, Jack K. Personal of 488-A Williams, White & Co.: Two Osterholm Grinding Machines Used in Machining Automobile Cylinder Blocks 632-C Windsor Automatic Co., Inc.: Di-Matic Automatic Screw Machine 477	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 166 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll Blades, Ingersoll 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,
Welding Field, An Anniversary in the 473 Welding Forming Bosses by John E. Hyler 198 Welding in Refrigerator Manufacture, Resistance M. L. Eckman 590 Welding Machine Acme Spot 632 Welding Machine for Corrosion-resisting Plates, Spot 890 Welding Machine for Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machine For Sheet Steel, Thomson-Gibb Flash Welding Machines For Assembling Automobile Parts, C. M. Taylor 175 Welding Machines for Assembling Oil Filters, Electric 557 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 510 Welding Machines in Building Ford V-Eights, Sparks Fly from 1600 510 Welding Manipulator for Tilting Heavy Work Welding Operations, GE Cycle Recorder for 149 Welding Operations, GE Cycle Recorder for 149 Welding Practice, Terms Used in Electric 110 Welding Rod, Columbium-treated Stainless-steel 667 Welding School Weld Attended 81355 Welding Timer Coroporation: Welco Electro-mechanical Welding Timer Accurate Timing Has Greatly Increased the	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room, Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Sons. Inc. S. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: 419 White Engineering Laboratories, Inc.: 760-D White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: 0ren-mesh Conveyor Chains 758 Whitney Metal Tool Co. Light-weight Bending Brake 558 Wick, Jr. James L. Personal of 696-B Wickes Bros.: Automatic 696-B Wickes Bros.: Automatic 640-B Wickman 10-millimeter Automatic 401 Wikander, O. R. Personal of 358 Willett, Warren P. Corrugating Drawn Shells with Dies Using Steel Balls 388 Williams & Co., J. H.: Agrippa Threading-tool Holder Superector' Reversible Ratchet Wrenches 759 Williams, Jack K. Personal of 32-B Williams, S. D. Personal of 488-A Williams, White & Co.: Two Osterholm Grinding Machines Used in Machining Automobile Cylinder Blocks 632-C Di-Matic Automatic Serew Machine 477 Wire and Cable Eisler Welder and Trimmer for 157 Wire and Cable Eisler Welder and Trimmer for 157	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 165 Yensen, Trygve D., Personal of 232-4 Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-4 Zee-Lock Counterbores, Ingersoll 81ades, Ingersoll 81ade
Welding Field, An Anniversary in the Welding Forming Bosses by John E. Hyler	for Automatic. John A. Honegger 785 Wheel Truing Devices, Grinding. William C. Betz 701 Wheels for the Tool-room. Carborundum Grinding 35 Wheels, Humidified Buffing and Polishing 230 Whistler & Bons. Inc. 8. B. Adjustable Perforating and Notching Dies 419 White Engineering Laboratories, Inc.: Abrasive Cut-off Machine 218 White, Frederick Rollin, Obituary of 760-D Whitney Chain & Mfg. Co.: Open-mesh Conveyor Chains 758 Whitney Metal Tool Co.: Light-weight Bending Brake 558 Wickes Bros.: Automatic Center-drive Crankshaft Lathe 84 Unglex Lathe for Heavy Crankshafts 619 Wickman 10-millimeter Automatic 401 Wikander, O. R. Personal of 358 Williams & Co., J. H.: Agrippa Threating-tool Holder 78 Corrugating Drawn Shells with Dies Using Steel Balls 79 Steel Balls 79 Williams, Jack K. Personal of 632-B Williams, Jack K. Personal of 632-B Williams, Jack K. Personal of 488-A Williams, White & Co.: Two Osterholm Grinding Machines Used in Machining Automobile Cylinder Blocks 632-C Windsor Automatic Co., Inc.: Di-Matic Automatic Screw Machine 477	Y Yale & Towne Mfg. Co.: Hand-operated Lifting Trucks 812 Yates, F. B., Personal of 488 Yellow-Back Series, Review of Machinery's 166 Yensen, Trygve D., Personal of 232-F Yeoman, I. F.: Hydraulically Operated Center and Pilot Support for Turret Lathe 72 Youngstown Improved Safety Limit Stops 343 Z Zee-Lock Core Drills and Reamers, Ingersoll 232-F Zee-Lock Counterbores, Ingersoll Blades, Ingersoll 10, 10, 10, 10, 10, 10, 10, 10, 10, 10,

